

CITY OF KANSAS CITY, MISSOURI



PUBLIC WORKS DEPARTMENT

KANSAS CITY STREETCAR MAIN STREET EXTENSION PROJECT

VOLUME 2 - VEHICLE MAINTENANCE FACILITY



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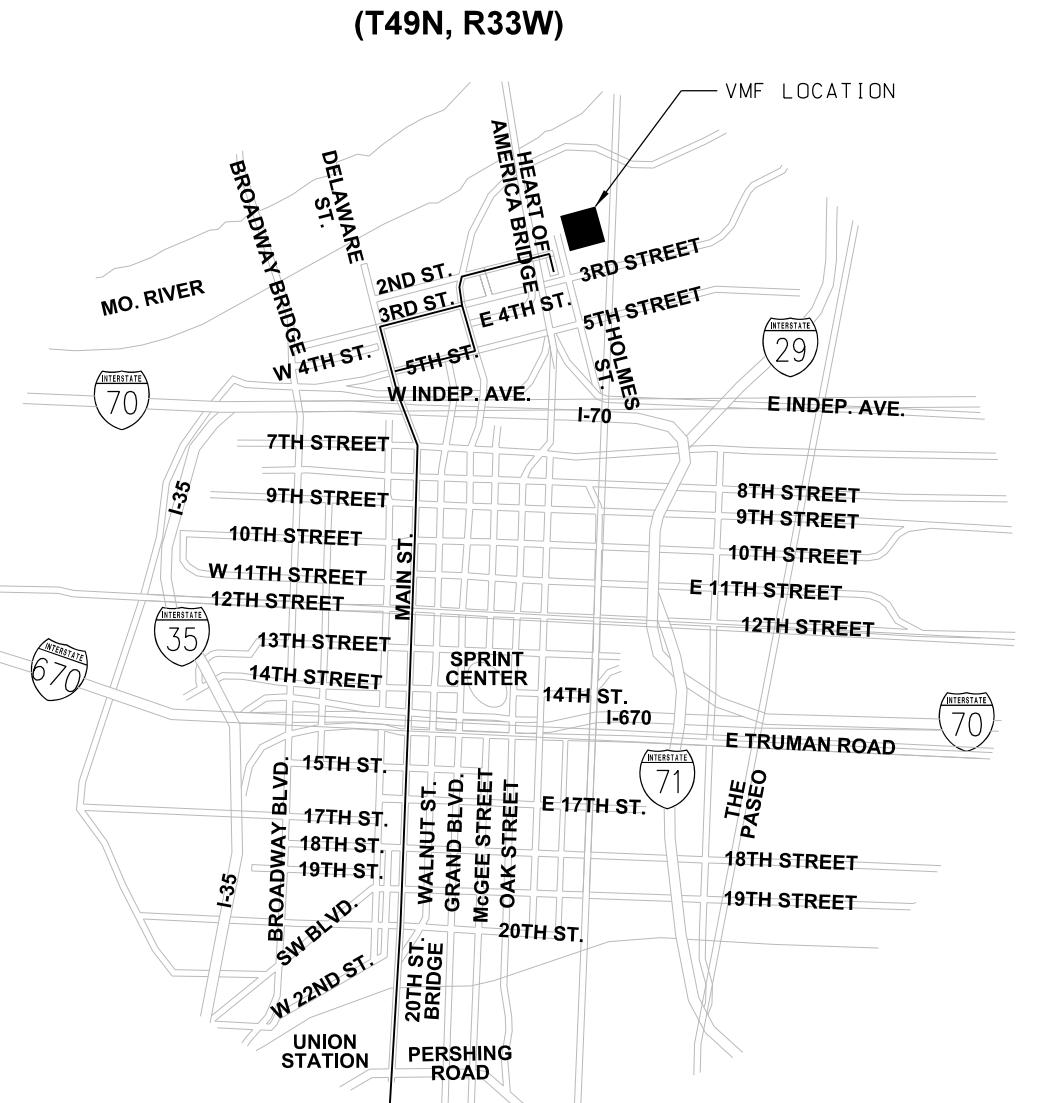
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30% RE-SUBMITTAL - AUGUST 2019

PROJECT NO.: 89022014-001



APPROVED BY



PROJECT MANAGER

CITY ENGINEER

DIRECTOR OF PUBLIC WORKS

ENTRY NO.

PROJECT NO. 89022014 C.D. NO. 4



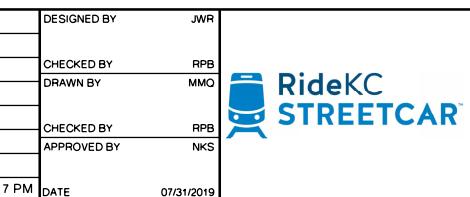
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

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VOLUME:	2
DRAWING NO.:	G001
SHEET NO.:	1

SHEET NO.	DRAWING NO.	TITLE	DESCRIPTION
GENERAL			
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49	M003	RENOVATION HVAC PLANS	LEVEL 2
50	M101	RENOVATION & EXPANSION HVAC PLANS	
51	M102	DEMOLITION & RENOVATION HVAC PLAN	WAREHOUSE
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REV	DATE	DESCRIPTION
		DESIGNED BY JWR
		CHECKED BY RPB
		DRAWN BY MMO
		CHECKED BY RPB
		APPROVED BY NKS
		DATE 07/31/2019
		PLOT DATE: 8/21/2019
		2 50:17 PM



PRELIMINARY PLANS - 30%
DATE: 08-27-2019
HDR
HDR Engineering, Inc.
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
INDEX OF DRAWINGS

SCALE FOR 22" x 34":
H: 1'-20"
FILENAME:
G010.dgn
CONTRACT NO.:

VOLUME:
2
DRAWING NO.: SHEET NO.:
G010 2

STANDARD ABBREVIATIONS



PRELIMINARY PLANS - 30%

HDR HDR Engineering, Inc.
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority 000056

Certificate of Authority, 000856

DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION

STANDARD ABBREVIATIONS
SHEET 1 OF 2

SCALE FOR 22" x 34":	
NOT TO SCALE	
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G030.dgn	
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<u>HHHHHHHHHHHH</u>	
VOLUME:	
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DRAWING NO.:	SHEET NO.
G030	3

STANDARD ABBREVIATIONS

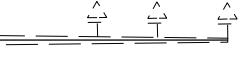
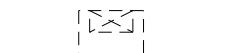
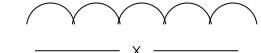
GENERAL ABBREVIATIONS

O	W
OC or O.C. ON CENTER or ON CENTERS	S/N SOUTH OF NORTH RIGHT-OF-WAY LINE
OCS OVERHEAD CATEINARY SYSTEM	S/O SOUTH OF
OD or O.D. OUTSIDE DIAMETER or OUTSIDE DIMENSION	SP SPACE or SPACING or SIGNAL POLE or STATION POINT
OFO OVERHEAD FIBER OPTIC	SPEC SPECIFICATIONS
OHC OVERHEAD COAXIAL	SO SQUARE
OHP OVERHEAD POWER	S/S SOUTH OF SOUTH RIGHT-OF-WAY LINE
OHT OVERHEAD TELEPHONE	SSP SMOOTH STEEL PIPE
OPP OPPOSITE	ST STREET
P	W
PIPE	STA STATION
(P) PASSENGER	STD STANDARD
PB PULL BOX	STL STEEL
PCC PORTLAND CEMENT CONCRETE	STOR STORAGE
PCCP PORTLAND CEMENT CONCRETE PAVEMENT	STR OR STRUCT STRUCTURE
PCL PROJECT CONTROL LINE	SW SOUTHWEST, SWITCH or SIDEWALK
PE POLYETHYLENE	SWR OR SS SANITARY SEWER
PED PEDESTRIAN	SYM SYMMETRICAL
PF POINT OF FROG	T
PGL PROFILE GRADE LINE	T or TEL TELEPHONE
PKG PARKING	TAN TANGENT
PL PROPERTY LINE	TB TOP OF BALLAST
PLUM'G PLUMBING	TBC TOP BACK OF CURB
POL POINT ON LINE	TBD TO BE DETERMINED
PP POWER POLE	TBS TO BE SURVEYED
PROP PROPERTY	TCB TRAFFIC CONTROL BOX
PR PROPOSED	TD TRACK DRAIN
PEP POLYETHYLENE PIPE	TERM TERMINAL
(PU) POWER OPERATED	TEMP TEMPERATURE or TEMPORARY
PSF POUNDS PER SQUARE FOOT	TF TRACK FOOT
PSI POUNDS PER SQUARE INCH	TG TOP OF GRADE or TOP OF GRATE
PET PETROLEUM	TH TEST HOLE
PVC POLYVINYLC CHLORIDE	THK THICK or THICKNESS
PVMT PAVEMENT	THRU THROUGH
Q	X
QTY QUANTITY	T.O. TOP OF
QUAD QUADRANT	TOC TRAFFIC OPERATIONS CENTER
R	X-DRAIN
RADIUS	TOD TRANSIT ORIENTED DEVELOPMENT
RC REINFORCED CONCRETE	TOP TOP OF PIPE
RCB REINFORCED CONCRETE BOX	T/R or TOR TOP OF RAIL
RCH REACH	TOS TOE OF SLOPE
RCP REINFORCED CONCRETE PIPE	TPSS TRACTION POWER SUBSTATION
RD ROAD	TRANS. TRANSITION
RE AREA/AREMA	TRK TRACK
RECT RECTANGLE or RECTIFIER	TS TRAFFIC SIGNAL
REF REFERENCE	T.S. TYPICAL SECTION
REINF REINFORCE, REINFORCED or REINFORCEMENT	TSB TOP OF SUB-BALLAST
REM REMOVE	TSC TRAFFIC SIGNAL CONDUIT
RET RETAINING	TV TELEVISION
REV REVISE, REVISED or REVISION	T/W TOP OF WALL
REQ'D REQUIRED	TYP TYPICAL
RGS RIGID GALVANIZED STEEL	U
RH RIGHT HAND	UD UNDERDRAIN
RR RAILROAD	UFO UNDERGROUND FIBER OPTIC
RRS or RS RAILROAD SIGNAL	UG UNDERGROUND
RSC RAILROAD SIGNAL & COMMUNICATION	UGC UNDERGROUND COAXIAL
RT RIGHT	UGP UNDERGROUND POWER
RTS RETENTION SWALE	UGT UNDERGROUND TELEPHONE
RET W or RW RETAINING WALL	UNO or UON UNLESS NOTED OTHERWISE
ROW or R/W RIGHT OF WAY	UNK UNKNOWN
RVR RIVER	UPRR UNION PACIFIC RAILROAD
RY RAILWAY	URC UNREINFORCED CONCRETE
S	U
SOUTH or SLOPE	US UNITED STATES
SALV SALVAGE	V
SB SOUTHBOUND	VAR VALVE or VELOCITY
SC STREET CAR	VC VARIES or VARIABLE
SD STORM DRAIN	VCP VERTICAL CURVE
SDC STORM DRAIN CULVERT	VERT VERTICL
SDCB STORM DRAIN CATCH BASIN	VLT VAULT
SDCO STORM DRAIN CLEAN OUT	VMF VEHICLE MAINTENANCE FACILITY
SDD STORM DRAIN DITCH	VMS VARIABLE MESSAGE SIGN
SDMH STORM DRAIN MANHOLE	
SDP STORM DRAIN PIPE	
SDPS STORM DRAIN PUMP STATION	
SDS STORM DRAIN SWALE	
SDV STORM DRAIN VAULT	
SE SOUTHEAST	
SECT SECTION	
SGL SUB-GRADE LINE	
SHT SHEET	
SIG SIGNAL	
SIM SIMILAR	
SL SEWER LATERAL	
SLP SLOPE	
SMH SEWER MANHOLE	

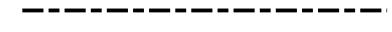
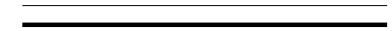
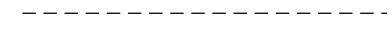
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			CHECKED BY	RPB					NOT TO SCALE			
			DRAWN BY	MMO					FILE NAME:			
			CHECKED BY	RPB					G031.dgn			
			APPROVED BY	NKS					CONTRACT NO.:			
			DATE	07/31/2019					#####			
PLOT DATE: 8/21/2019		2:50:23 PM		NOT FOR CONSTRUCTION		VOLUME:						

STANDARD SYMBOLS

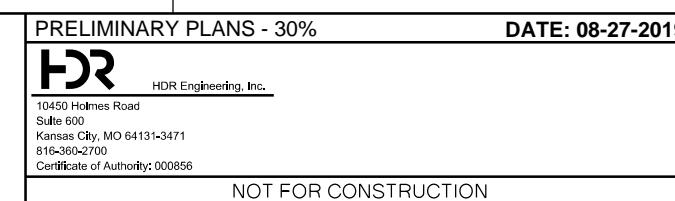
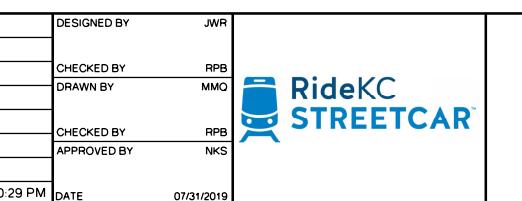
EXISTING

POWER POLE	○ PP	MAST ARM WITH SIGNALS	
LIGHT POLE	○ LP	TURN LANE ARROW	
ELECTRIC TRANSFORMER	☒ TRANS	SURVEY CONTROL POINT	△
ANCHOR	← GUY	BENCHMARK	
TELEPHONE POLE	○ TP	SHOEBOX LIGHT TO BE REMOVED	□○
TELEPHONE PEDESTAL	☒ TELE PED	SHOEBOX LIGHT TO BE RELOCATED	■○
CABLE TV PEDESTAL	▲ CATV PED	SHOEBOX LIGHT TO REMAIN	■○
FIRE HYDRANT	○ FH	HOLOPHANE LIGHT TO BE REMOVED	●○
WATER METER	W WM	HOLOPHANE LIGHT TO BE RELOCATED	●○
WATER VALVE	○ WV	LIGHT POLE TO BE REMOVED	○○
ELECTRIC METER	□ EM	LIGHT POLE TO REMAIN	○○
GAS METER	□ GM	LIGHT REMOVED	○○
GAS VALVE	○ GV	LIGHT RELOCATED	○○
MAIL BOX	□ MB	LIGHT TO REMAIN	○○
SIGN	—○—	SIGNAL EQUIPMENT JUNCTION BOX	
TREE (DIA.)	 12"	LIGHTCORE	—E1—
PINE TREE (DIA.)	 12"	AT&T TRANSMISSION	—T11—
BUSH	 3'	WATER LINE	—W—
TREE LINE		GOOGLE	—W#—
FENCE	—X—	CONDUIT	—-----
STREET LIGHT CONTROL BOX	□ LCB	SPRINT	—T14—
PULL BOX	□ PB	QWEST	—E2—
SIGNAL CONTROL BOX	☒ SCB	ZAYO	—T8—
CURB STOP	○ CS	SUREWEST	—T15—
EXPANSION JOINT	EJ	MCI VERIZON	—T7—
GAS TEST POINT	☒ GTP	TIME WARNER	—T7—
SAN. SEWER LINE W/SIZE	—24"RCP—	STEAM	—STEAM—
UTILITY VAULT		ACSI	—T9—
		TV	—CTV—
		GAS	—G—
		UNDERGROUND POWER LINES	—E—
		RIGHT-OF-WAY LINE	—T—

PROPOSED

EXISTING TRACK ALIGNMENT	
TRACK ALIGNMENT AND TRACK SLAB	
RIGHT-HAND TURNOUT	
LEFT-HAND TURNOUT	
SAWCUT - ROADWAY	

REV	DATE	DESCRIPTION
		DESIGNED BY JWR
		CHECKED BY RPB
		DRAWN BY MMO
		CHECKED BY RPB
		APPROVED BY NKS
		DATE 07/31/2019
PLOT DATE:	8/21/2019	2:50:29 PM



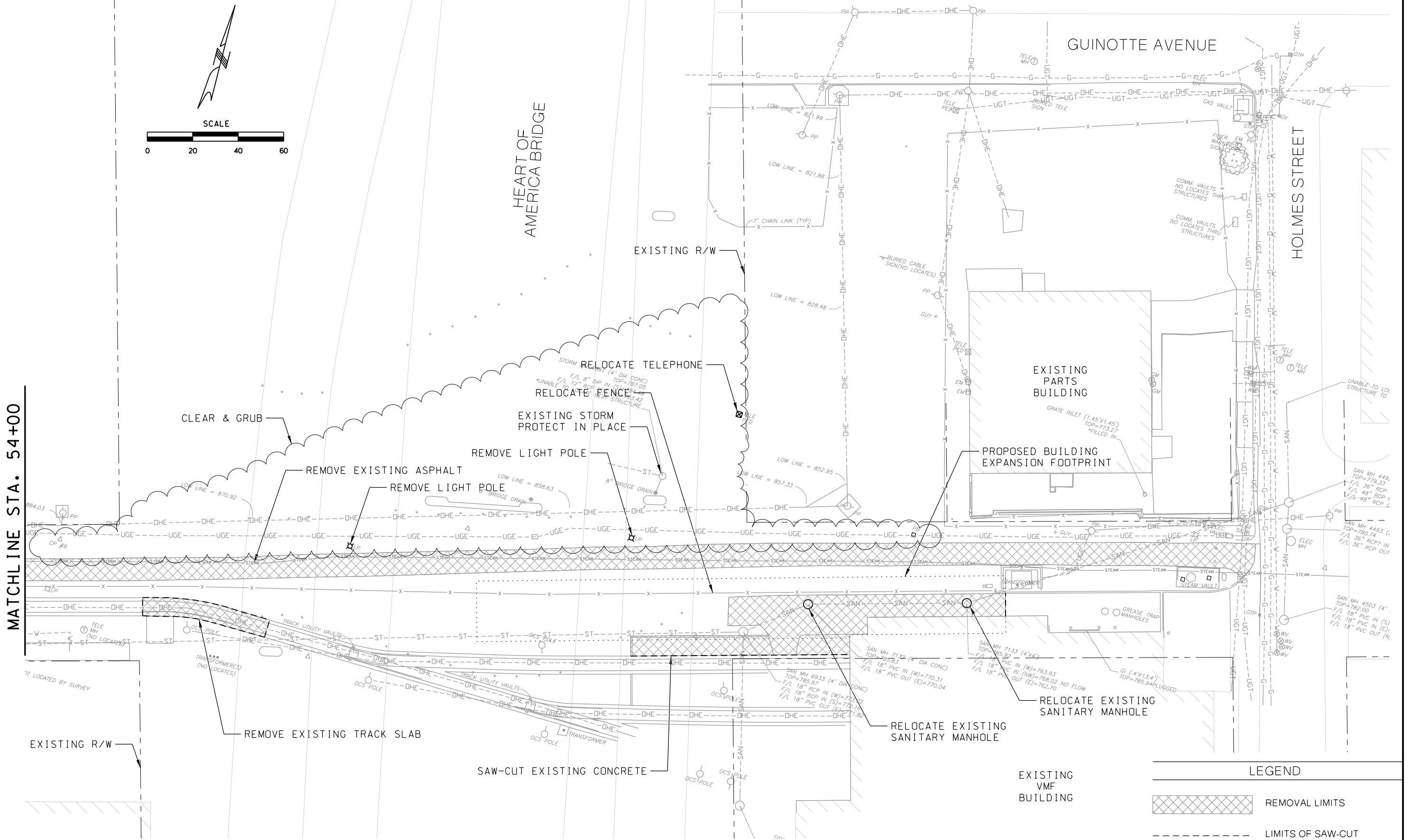
KANSAS CITY STREETCAR MAIN STREET EXTENSION
STANDARD SYMBOLS

SCALE FOR 22"X34":
NOT TO SCALE
FILENAME: G035.dgn
CONTRACT NO.: #####
VOLUME: 2
DRAWING NO.: G035 SHEET NO.: 5

GENERAL NOTES – KANSAS CITY STREETCAR

1. ALL MATERIALS AND WORK REQUIRED FOR THE PROJECT SHALL CONFORM TO THE KANSAS CITY METRO CHAPTER APWA STANDARD SPECIFICATIONS (AND SUPPLEMENTS) AND DESIGN CRITERIA, AS REVISED, ADOPTED AND PROVIDED BY KCMO ON THE KCMO.GOV WEBSITE.
2. RIGHT-OF-WAY LINES SHOWN ARE BASED ON RECORDED SURVEY INFORMATION ON RECORD WITH THE CITY OF KANSAS CITY AND JACKSON COUNTY.
3. CONTRACTOR TO VERIFY VERTICAL CLEARANCES FROM THE PROPOSED TRACKS TO OVERHEAD FACILITIES (ELECTRIC, CABLE, TELEPHONE).
4. ALL GRADIENTS ARE IN PERCENT UNLESS NOTED OTHERWISE.
5. THE KANSAS CITY STREETCAR TRACK IS DESIGNED PER THE KANSAS CITY STREETCAR DESIGN CRITERIA.
6. STATIONING SHOWN ON TYPICAL SECTIONS IS APPROXIMATE. ALL STATIONING REFERS TO SOUTHBOUND TRACK, UNLESS NOTED OTHERWISE.
7. GUIDELINES FROM THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION'S (AREMA) "MANUAL FOR TRACK ENGINEERING", LATEST EDITION, ARE USED FOR VARIOUS ASPECTS OF THE DESIGN.
8. GUIDELINES FROM THE FHWA "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), 2009 EDITION, AND KANSAS CITY PUBLIC WORKS STANDARD DRAWINGS, LATEST REVISION, ARE USED FOR VARIOUS ASPECTS OF THE DESIGN.
9. TRACK PROFILES REPRESENT TOP OF RAIL PROFILE UNLESS NOTED OTHERWISE. WHERE APPLICABLE, SIDING TOP OF RAIL PROFILE SIMILAR.
10. THE RAIL PROFILE IS ALWAYS CARRIED ON THE LOW RAIL THROUGH SUPERELEVATED HORIZONTAL CURVES AND SPIRALS.
11. SUPERELEVATION IS ACCOMPLISHED BY MAINTAINING TOP OF INSIDE (LOW) RAIL AT PROFILE GRADE AND BY RAISING OUTSIDE (HIGH) RAIL AN AMOUNT EQUAL TO THE SUPERELEVATION.
12. UTILITIES SHOWN ON THE PLAN SHEETS ARE BASED ON INFORMATION RECEIVED FROM MUNICIPALITIES, AGENCIES, AND PRIVATE COMPANIES. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION THROUGH POTHOLING AND FIELD SURVEY.
13. TRACKS ON PLAN AND PROFILE DRAWINGS ARE INDICATED BY CENTERLINE OF TRACK. EXCEPT WHERE INDICATED, OFFSET DISTANCES FROM TRACK TO OTHER FACILITIES ARE MEASURED FROM CENTERLINE OF TRACK.
14. TURNOUT HEADBLOCK TIES AND SWITCH MACHINES SHALL BE INSTALLED BETWEEN THE RAILS AT THE LOCATION LABELED AS PT_SW ON THE PLANS.
15. CONTRACTOR TO REVIEW GEOTECHNICAL REPORT FOR EXISTING CONDITIONS.
16. THE KANSAS CITY STREETCAR PROJECT IS FEDERALLY FUNDED; ALL MATERIALS MUST MEET BUY AMERICA REQUIREMENTS.
17. THESE GENERAL NOTES ARE GENERAL IN NATURE AND PROJECTWIDE. ANY NOTES ON SPECIFIC SHEETS THAT ARE IN CONFLICT SUPERCEDE THESE GENERAL NOTES.

REV	DATE	DESCRIPTION	DESIGNED BY JWR	CHECKED BY RFB	DRAWN BY MMO	CHECKED BY RFB	APPROVED BY NKS	RideKC STREETCAR	PRELIMINARY PLANS - 30% DATE: 08-27-2019 HDR HDR Engineering, Inc. 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	KANSAS CITY STREETCAR MAIN STREET EXTENSION GENERAL NOTES	SCALE FOR 22" x 34": NOT TO SCALE FILENAME: G040.dgn CONTRACT NO.: ##### VOLUME: 2 DRAWING NO.: G040 SHEET NO.: 6
PLOT DATE:	8/21/2019		DATE	07/31/2019	2:50:31 PM				NOT FOR CONSTRUCTION		



PRELIMINARY PLANS - 3

DATE: 08-27-2019

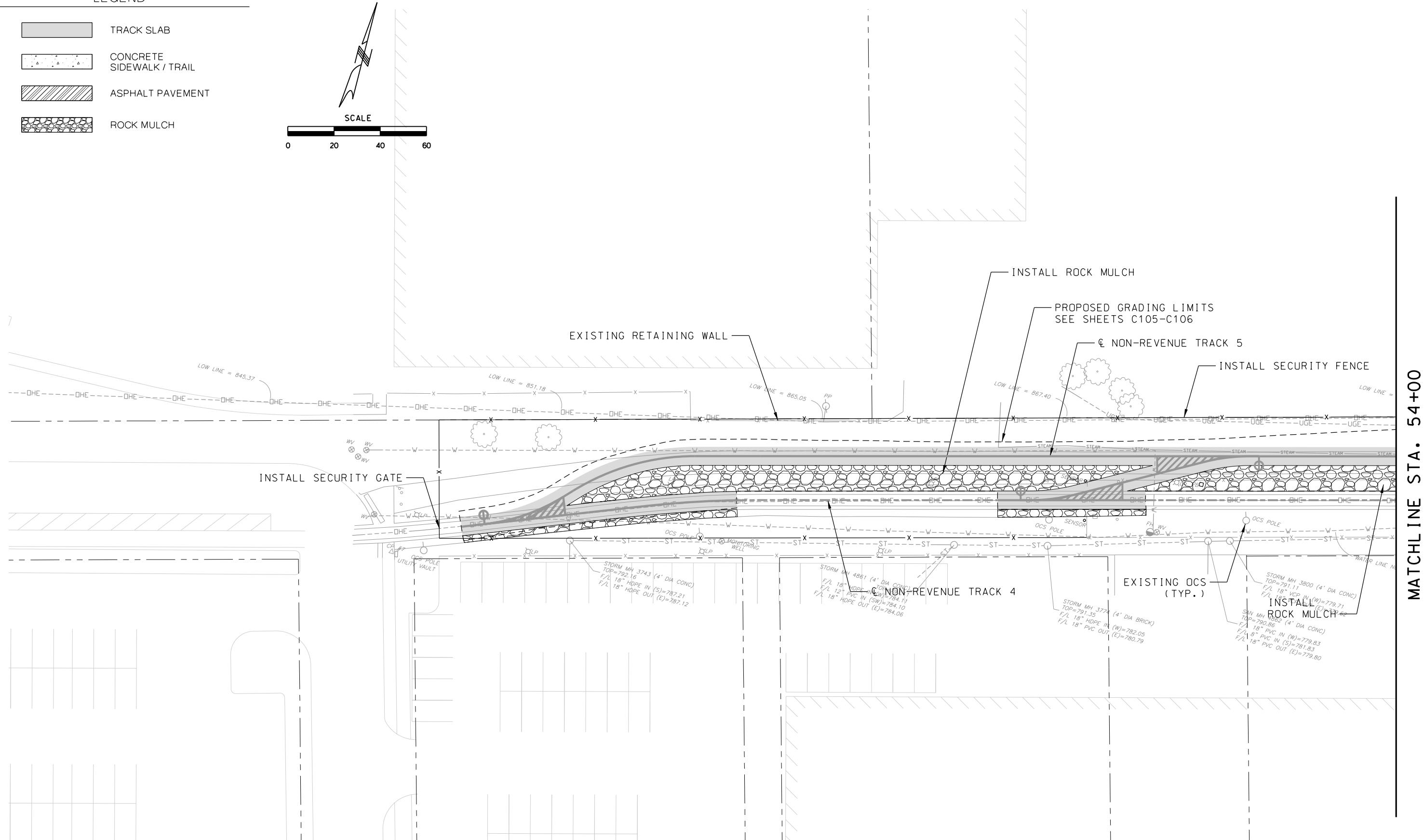
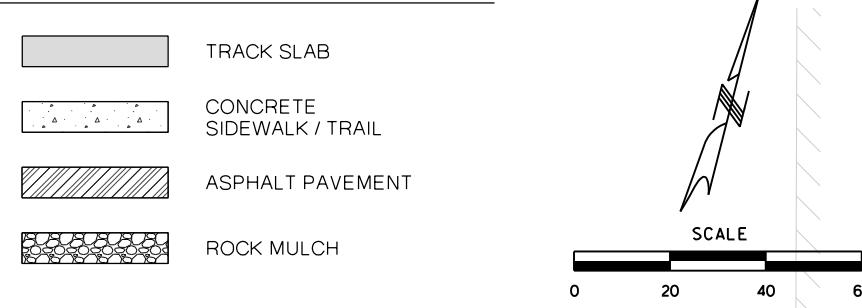
KANSAS CITY STREETCAR MAIN STREET EXTENSION

VEHICLE MAINTENANCE FACILITY
CIVIL DEMOLITION PLAN
SHEET 2 OF 2

NOT FOR CONSTRUCTION

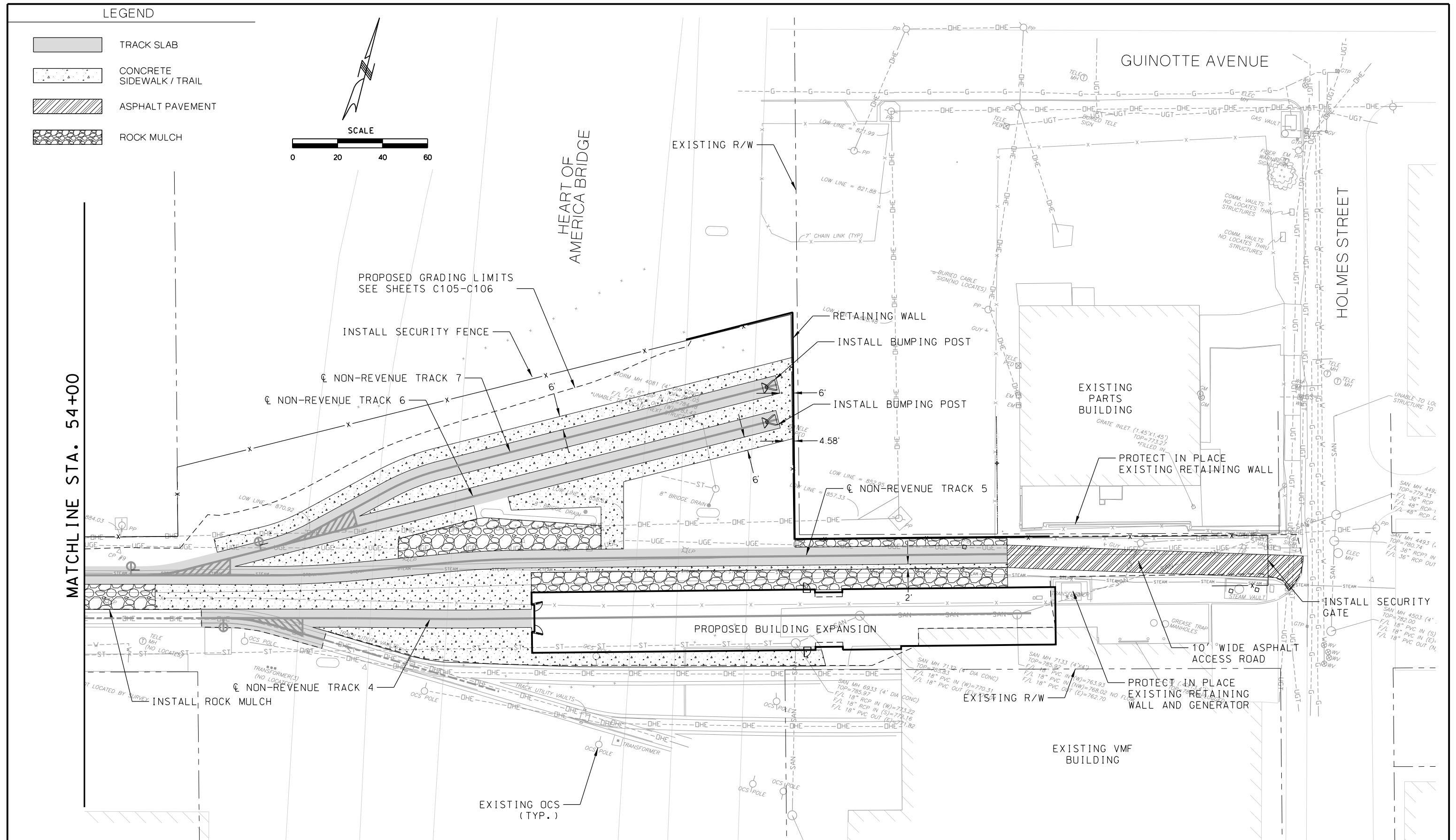
SCALE FOR 22'x34':
1"=20'
ENAMEL:
02 dgn
CONTRACT NO.:
NNNNNNNNNN
VOLUME:
DRAWING NO.: SHEET NO.:
C102 8

LEGEND



MATCHLINE STA. 54+00

REV	DATE	DESCRIPTION	DESIGNED BY JWR	CHECKED BY RPB	DRAWN BY MMO	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22"x34": H: 1'-20"
						 HDR Engineering, Inc. 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856		VEHICLE MAINTENANCE FACILITY	FILENAME: C103.dgn
								CIVIL SITE PLAN	CONTRACT NO.: #####
								SHEET 1 OF 2	VOLUME: 2
						NOT FOR CONSTRUCTION			DRAWING NO.: C103 SHEET NO.: 9
PLOT DATE: 8/21/2019		2:50:39 PM	DATE	07/31/2019					



PRELIMINARY PLANS - 30% **DATE: 08-27-2011**

HDR HDR Engineering, Inc.

10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

NOT FOR CONSTRUCTION

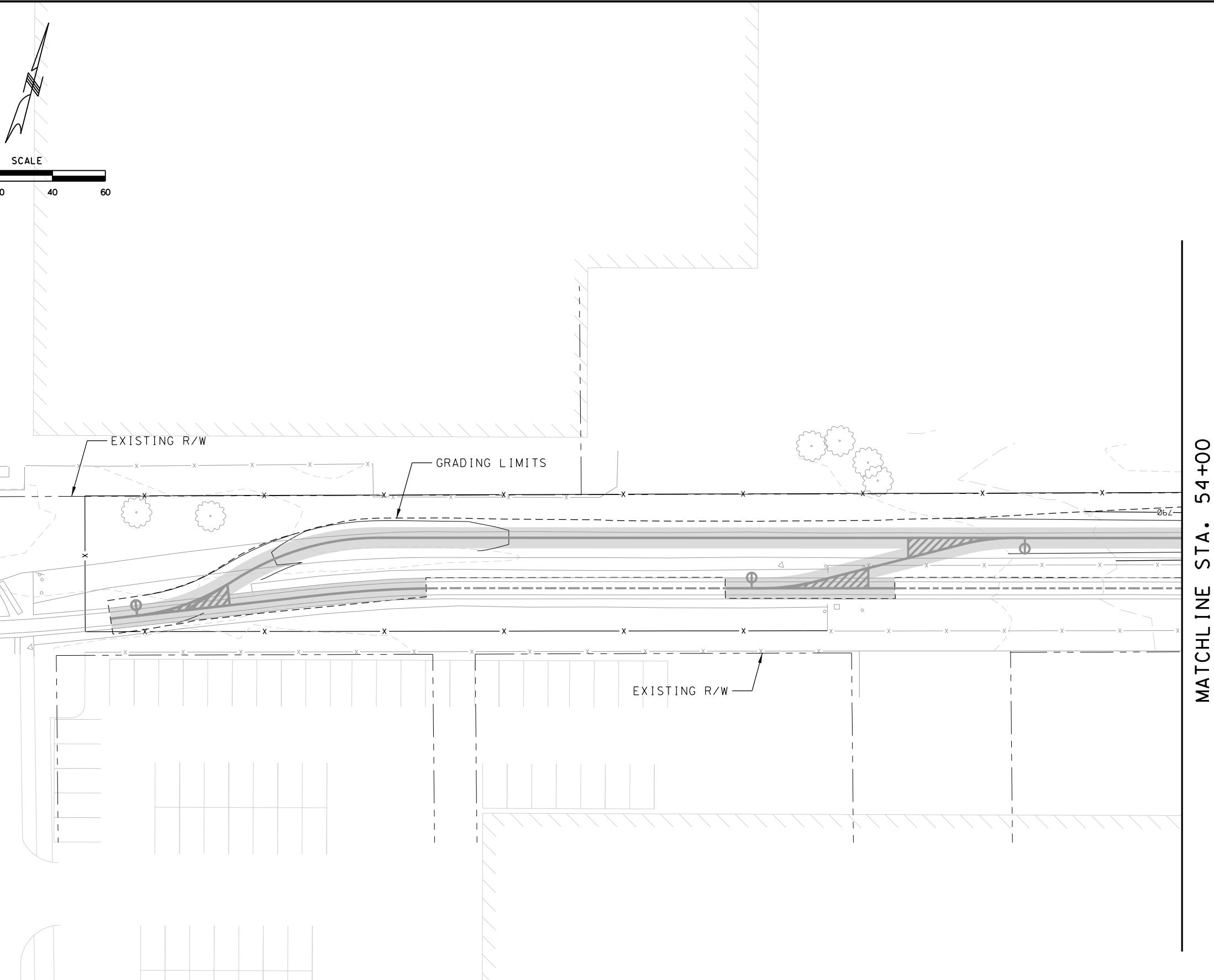
KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
CIVIL SITE PLAN
SHEET 2 OF 2

SCALE FOR 22"x34":	
4. 1"=20'	
FILENAME:	
C104.dgn	
CONTRACT NO.:	
XXXXXXXXXXXX	
VOLUME:	
2	
DRAWING NO.:	SHEET NO.:
C104	10

LEGEND

- GRADING LIMITS
- EXISTING CONTOURS
- PROPOSED CONTOURS

SCALE
0 20 40 60



REV	DATE	DESCRIPTION
		DESIGNED BY JWR
		CHECKED BY RPB
		DRAWN BY MMO
		CHECKED BY RPB
		APPROVED BY NKS
		DATE 07/31/2019



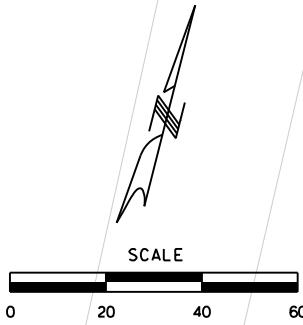
PRELIMINARY PLANS - 30%	DATE: 08-27-2019
 HDR Engineering, Inc. 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	
NOT FOR CONSTRUCTION	

KANSAS CITY STREETCAR MAIN STREET EXTENSION
 VEHICLE MAINTENANCE FACILITY
 CIVIL GRADING PLAN
 SHEET 1 OF 2

SCALE FOR 22" x 34": H: 1'-20"	FILE NAME: C105.dgn
CONTRACT NO.: #####	VOLUME: 2
DRAWING NO.: C105	SHEET NO.: 11

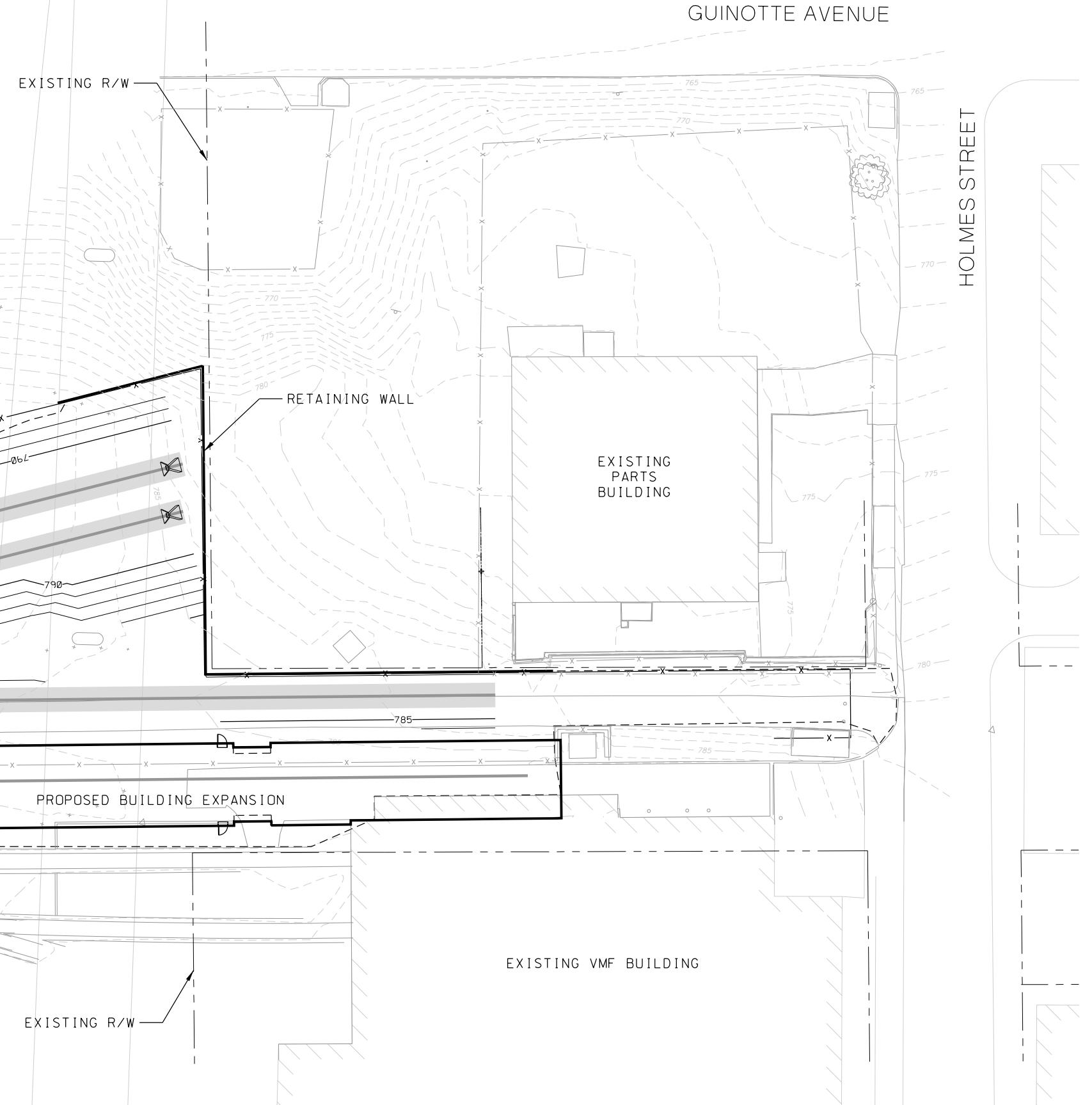
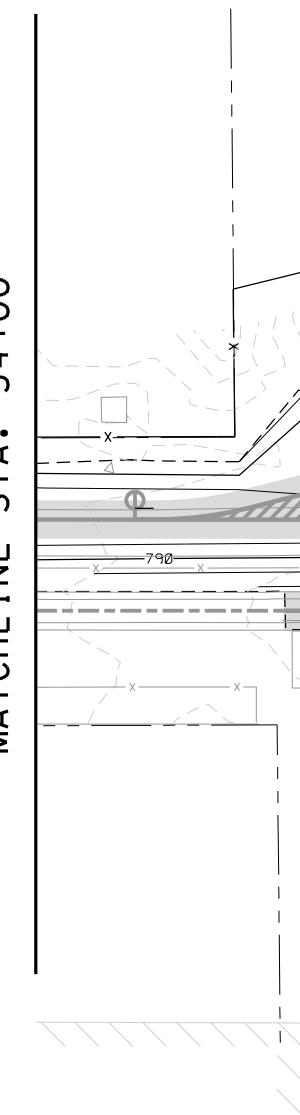
LEGEND

- GRADING LIMITS
- EXISTING CONTOURS
- PROPOSED CONTOURS



MATCHLINE STA. 54+00

HEART OF AMERICA BRIDGE



REV	DATE	DESCRIPTION
		DESIGNED BY JWR
		CHECKED BY RPB
		DRAWN BY MMO
		CHECKED BY RPB
		APPROVED BY NKS
		DATE 07/31/2019

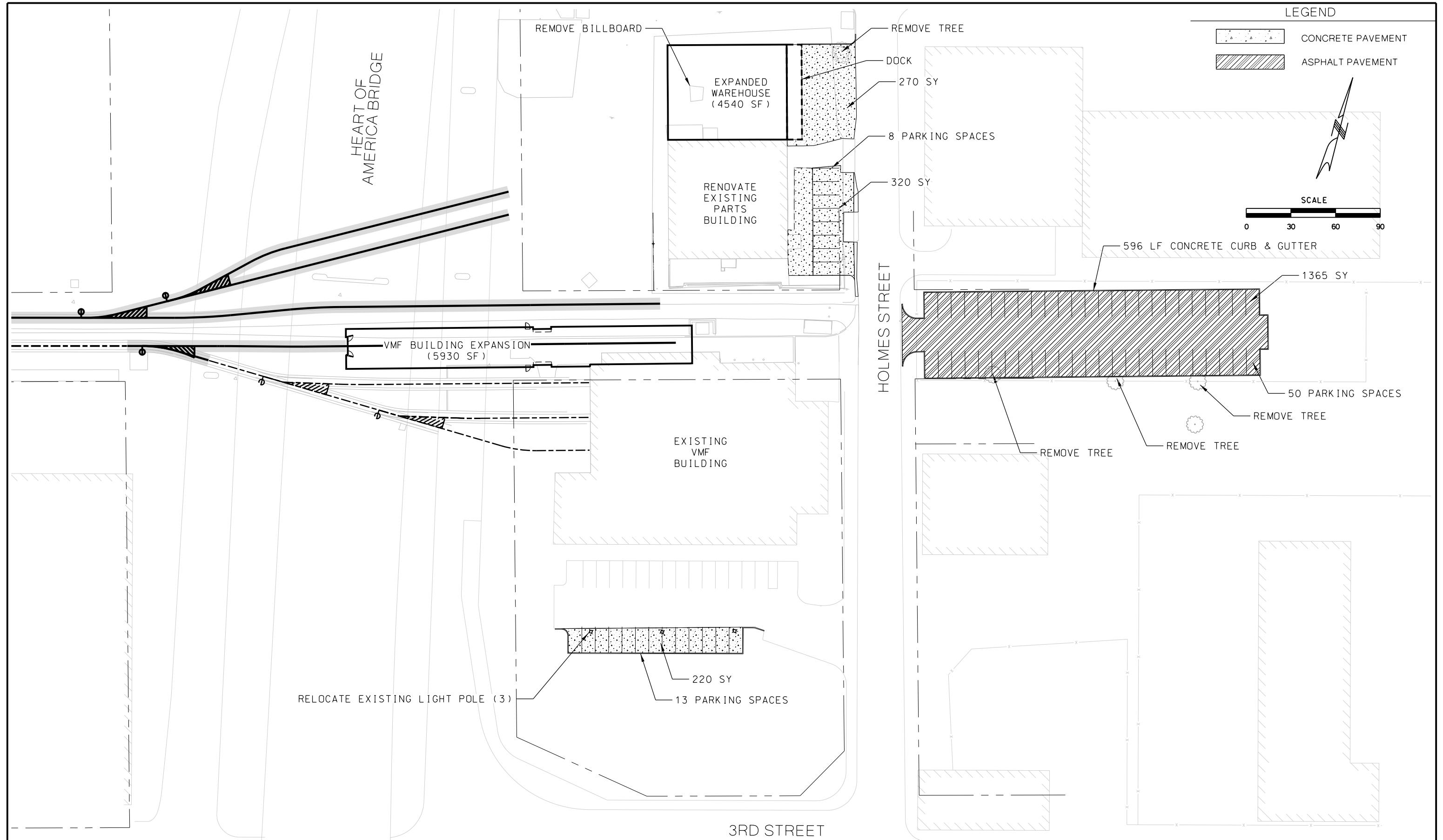


PRELIMINARY PLANS - 30%	DATE: 08-27-2019
 <p>HDR Engineering, Inc. 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856</p>	
NOT FOR CONSTRUCTION	

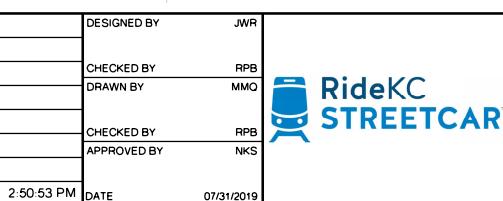
KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
CIVIL GRADING PLAN
SHEET 2 OF 2

SCALE FOR 22" x 34":
H 1:120
FILENAME:
C106.dgn
CONTRACT NO.:

VOLUME:
2
DRAWING NO.: C106
SHEET NO.: 12



REV	DATE	DESCRIPTION
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		CHECKED BY RPB
		DRAWN BY MMO
		CHECKED BY RPB
		APPROVED BY NKS
		DATE 07/31/2019



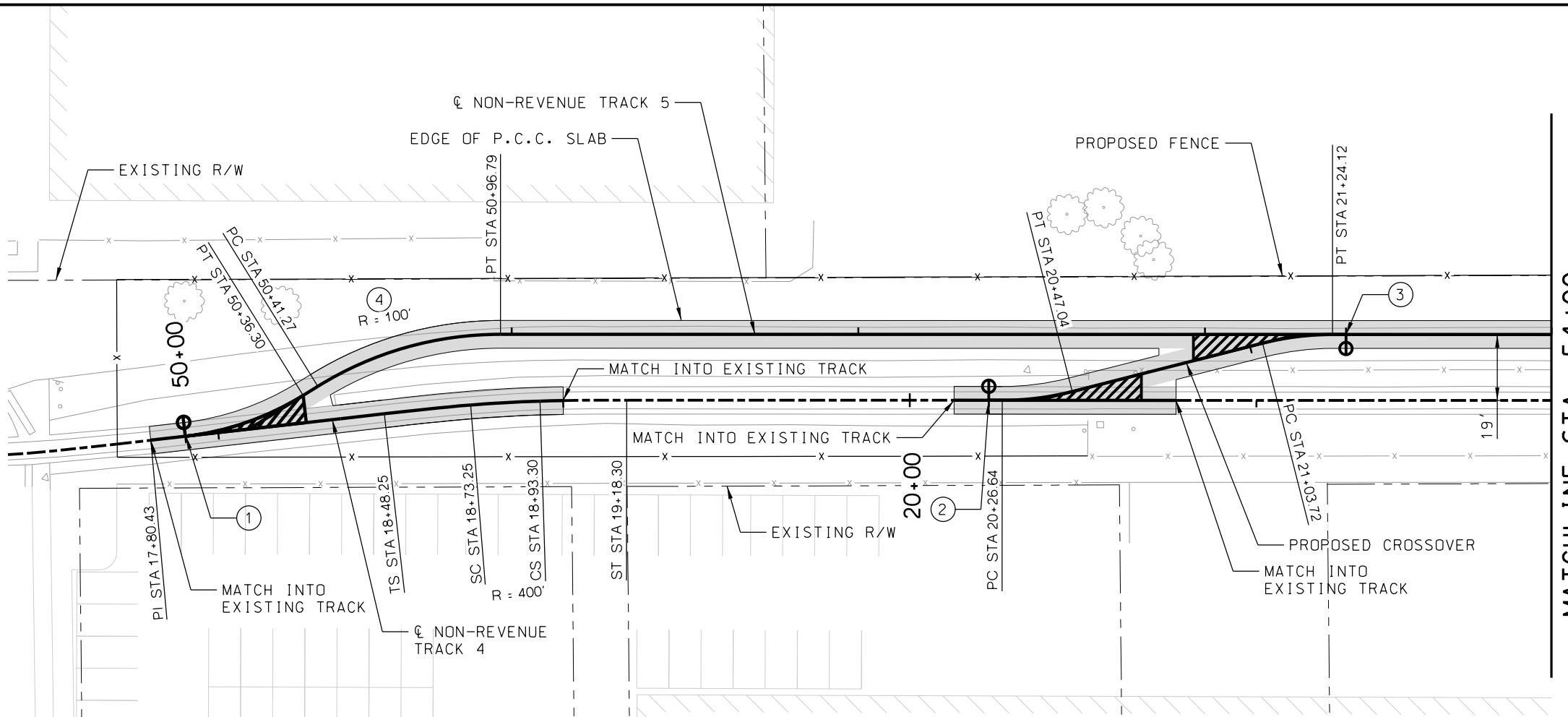
PRELIMINARY PLANS - 30%
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 816-360-2700
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DATE: 08-27-2019

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KANSAS CITY STREETCAR MAIN STREET EXTENSION
 VEHICLE MAINTENANCE FACILITY
 PARKING LOT EXPANSION

SCALE FOR 22'x34':
 1' = 30'
 FILENAME:
 C107.dgn
 CONTRACT NO.:
 #####
 VOLUME:
 2
 DRAWING NO.: C107
 SHEET NO.: 13



MA | CHLINE S | A. 34#00

TRACK SECTION

TEX				
e				
TEX				

796

794

792

790

788

786

784

50+00

51+00

52+00

53+00

54+00

796

794

792

790

788

786

784

POS 50+00.00

ELEV 791.76

0.42%

PVC 50+90.00

ELEV 792.14

PVI 51+00.00

ELEV 792.18

-0.40%

PVC 51+90.00

ELEV 791.83

20.00 VC = 185.40

PVI 52+00.00

ELEV 791.79

PVT 52+10.00

ELEV 791.76

-0.29%

EXISTING GROUND

TURNOUT

TOR. NON-REVENUE TRACK 5

TURNOUT

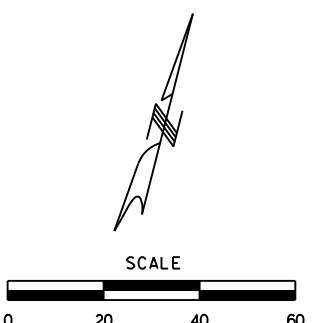
20.00 VC = 24.61

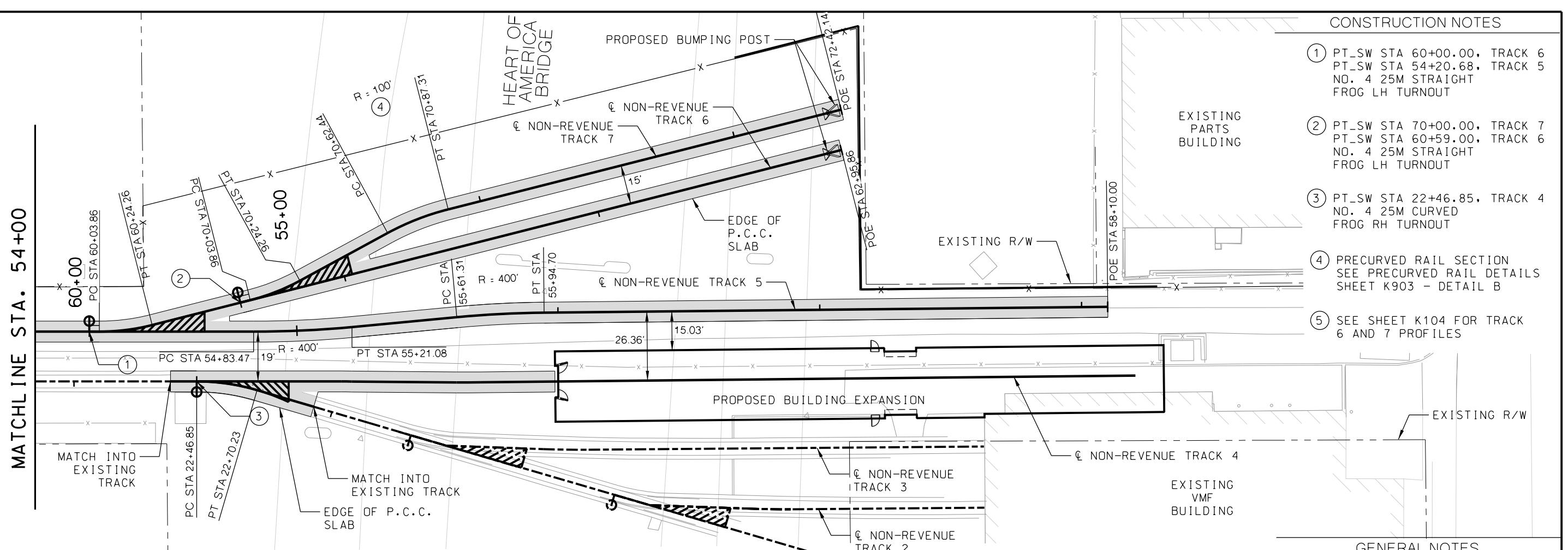
CONSTRUCTION NOTES

- 1 PT_SW STA 17+90.43, TRACK 4
PT_SW STA 50+00.00, TRACK 5
NO. 4 25M CURVED
FROG LH TURNOUT
- 2 PT_SW STA 20+22.78, TRACK 4
PT_SW STA 20+22.78, TRACK 4
NO. 4 25M STRAIGHT
FROG LH TURNOUT
- 3 PT_SW STA 53+40.68, TRACK 5
PT_SW STA 21+27.98, TRACK 4
NO. 4 25M STRAIGHT
FROG LH TURNOUT
- 4 PRECURVED RAIL SECTION
SEE PRECURVED RAIL DETAILS
SHEET K903 - DETAIL A

GENERAL NOTES

1. SEE DISCIPLINE SPECIFIC DRAWINGS FOR DETAILED INFORMATION ON CIVIL, TRAFFIC, SYSTEMS, AND DRAINAGE STRUCTURES.
2. ALL ELEVATIONS AND DIMENSIONS GIVEN ARE IN FEET UNLESS OTHERWISE NOTED.
3. ALL CURVES ARE BASED ON ARC DEFINITION.
4. PROFILES DESIGNED TO FINAL TOP OF RAIL ELEVATION.



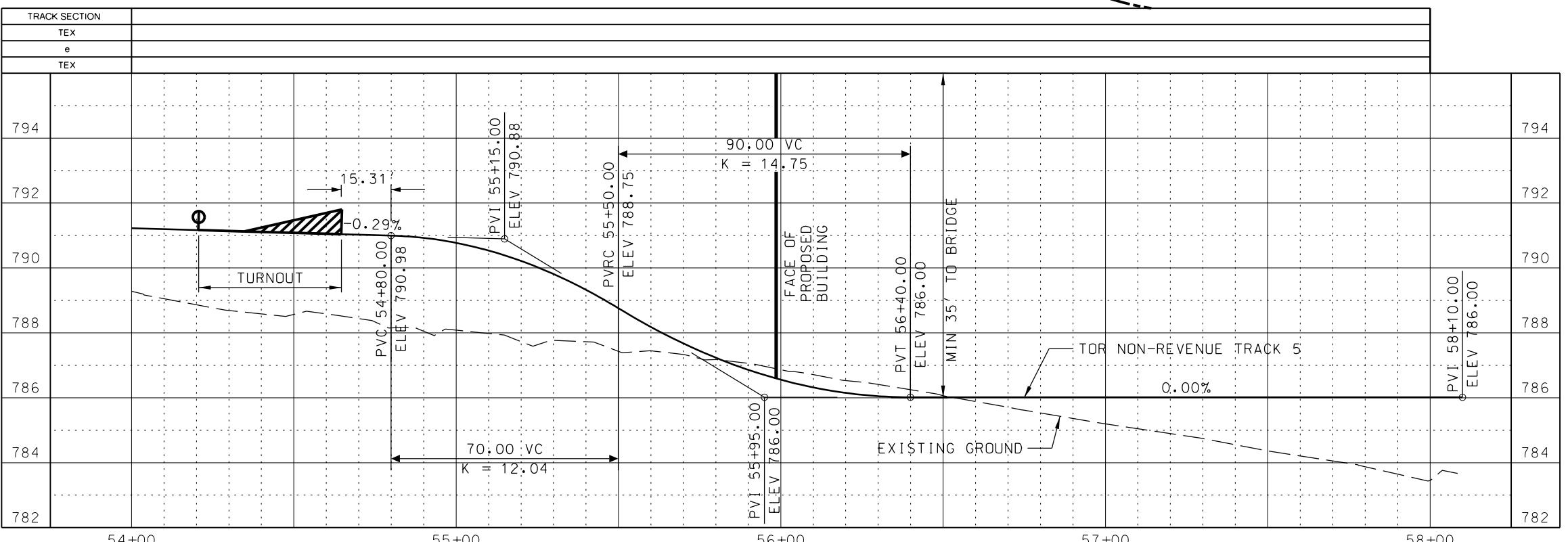
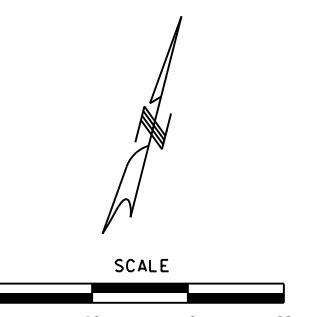


CONSTRUCTION NOTES

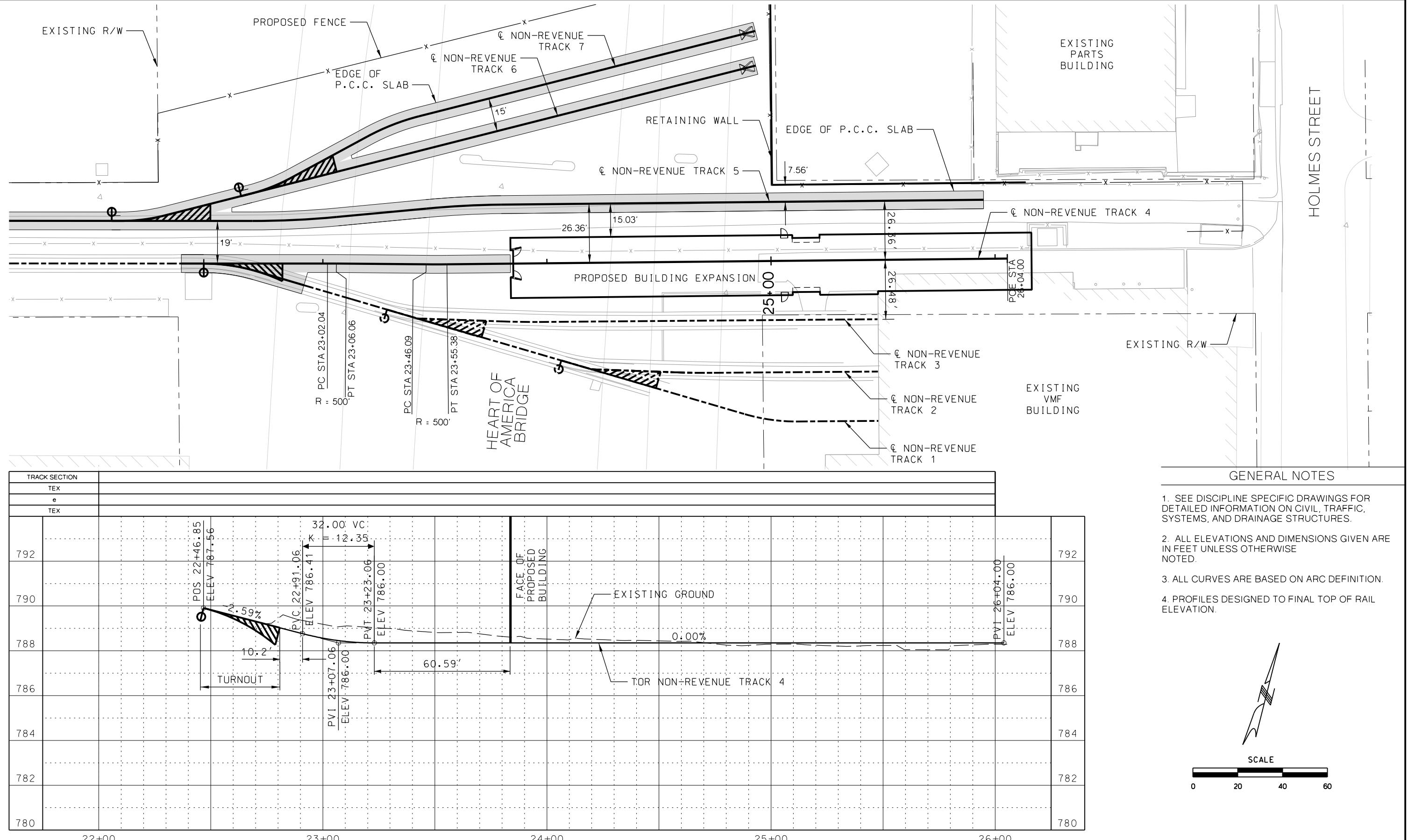
- ① PT_SW STA 60+00.00, TRACK 6
PT_SW STA 54+20.68, TRACK 5
NO. 4 25M STRAIGHT FROG LH TURNOUT
- ② PT_SW STA 70+00.00, TRACK 7
PT_SW STA 60+59.00, TRACK 6
NO. 4 25M STRAIGHT FROG LH TURNOUT
- ③ PT_SW STA 22+46.85, TRACK 4
NO. 4 25M CURVED FROG RH TURNOUT
- ④ PRECURRED RAIL SECTION
SEE PRECURRED RAIL DETAILS
SHEET K903 - DETAIL B
- ⑤ SEE SHEET K104 FOR TRACK
6 AND 7 PROFILES

GENERAL NOTES

1. SEE DISCIPLINE SPECIFIC DRAWINGS FOR DETAILED INFORMATION ON CIVIL, TRAFFIC, SYSTEMS, AND DRAINAGE STRUCTURES.
2. ALL ELEVATIONS AND DIMENSIONS GIVEN ARE IN FEET UNLESS OTHERWISE NOTED.
3. ALL CURVES ARE BASED ON ARC DEFINITION.
4. PROFILES DESIGNED TO FINAL TOP OF RAIL ELEVATION.



REV	DATE	DESCRIPTION	DESIGNED BY	JWR	CHECKED BY	RPB	DRAWN BY	MMO	CHECKED BY	RPB	APPROVED BY	NKS	DATE	07/31/2019	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22" x 34": H: 1' - 20"
																	VEHICLE MAINTENANCE FACILITY	
																	TRACK 5 PLAN AND PROFILE	
																	STA. 54+00 TO STA. 58+00	
																	VOLUME: #####	
																	2	DRAWING NO: K102
																	SHEET NO: 15	

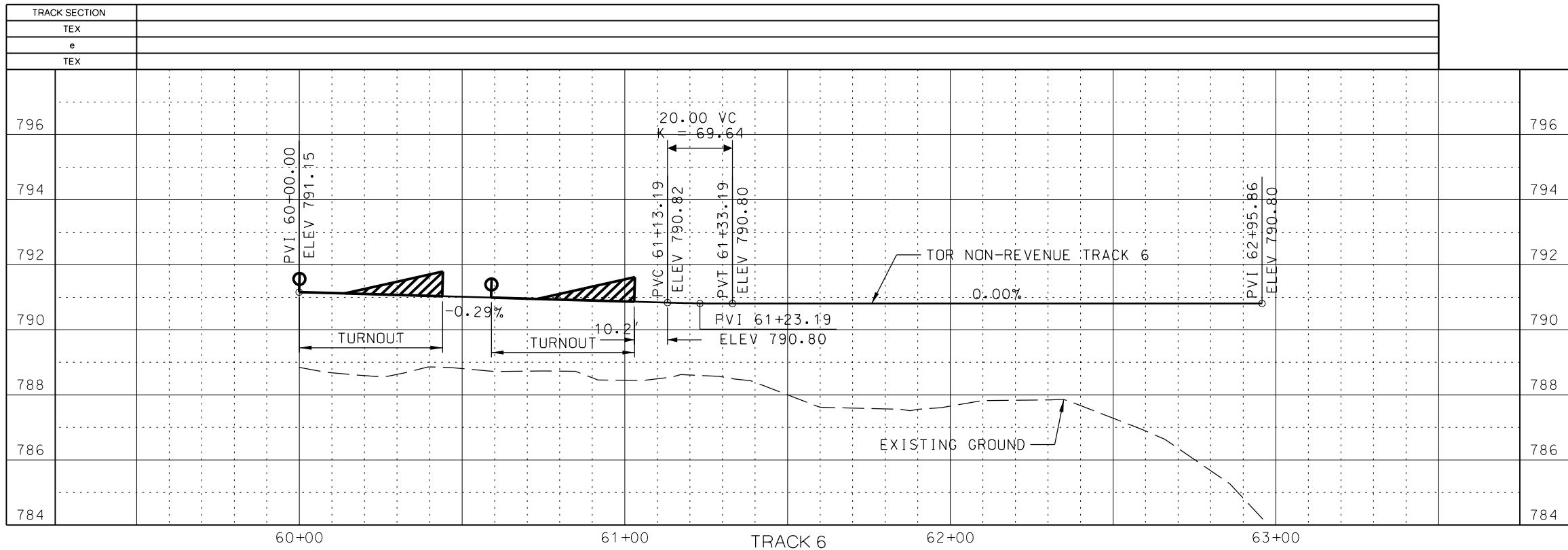


REV	DATE	DESCRIPTION	DESIGNED BY	JWR	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22" x 34": H: 1'-20"			
			CHECKED BY	RPB				FILENAME: K103.dgn			
			DRAWN BY	MMO				CONTRACT NO.: #####			
			CHECKED BY	RPB				VOLUME: #####			
			APPROVED BY	NKS				2			
			DATE	07/31/2019				DRAWING NO.: K103			
								SHEET NO.: 16			
PLOT DATE: 8/21/2019 2:51:01 PM											
NOT FOR CONSTRUCTION											

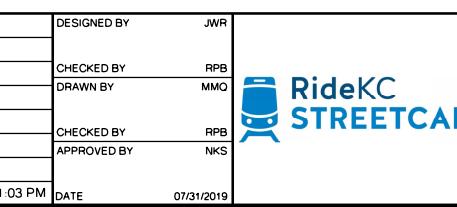


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		DESIGNED BY JWR
		CHECKED BY RPB
		DRAWN BY MMO
		CHECKED BY RPB
		APPROVED BY NKS
		DATE 07/31/2019



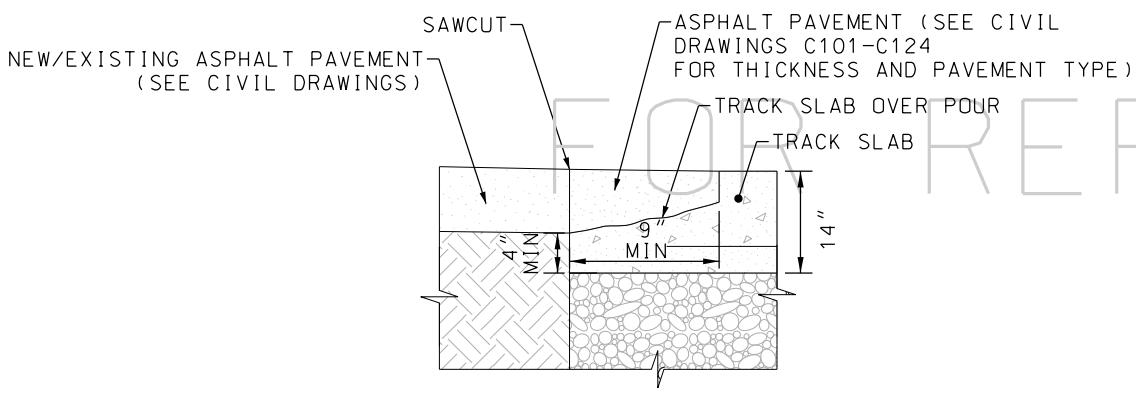
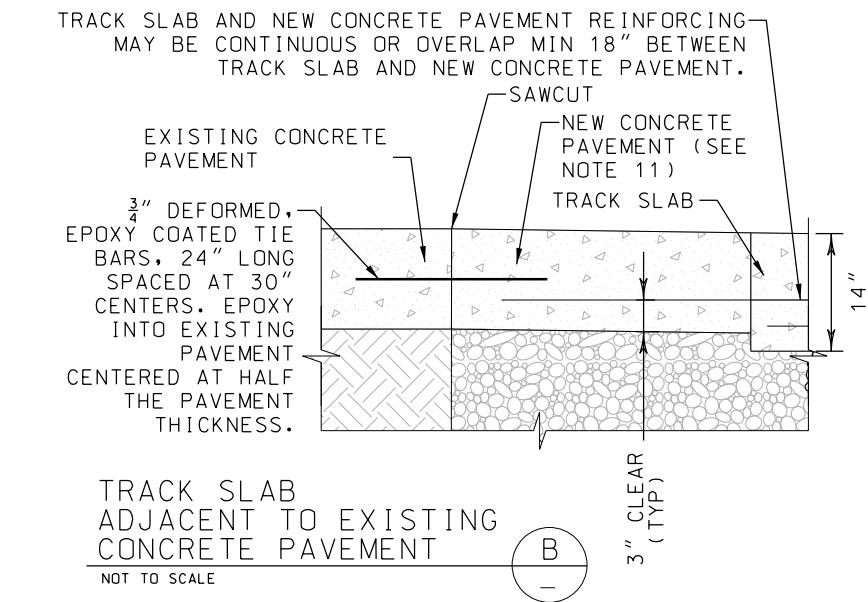
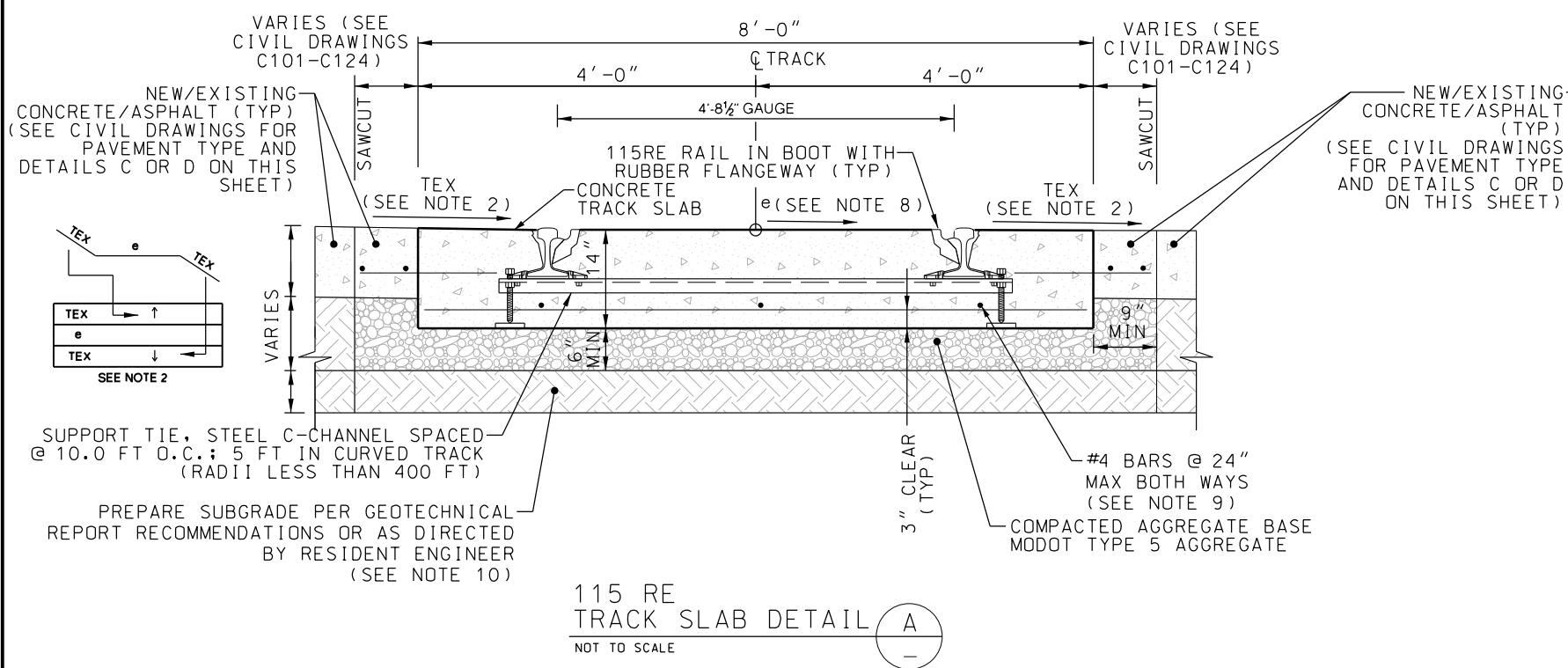
PRELIMINARY PLANS - 30%
DATE: 08-27-2019
HDR Engineering, Inc.
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Suite 600
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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
TRACK 6 AND TRACK 7
PROFILES

SCALE FOR 22" x 34":
H: 1:20
FILENAME:
K104.dgn
CONTRACT NO.:

VOLUME:
2
DRAWING NO.: K104
SHEET NO.: 17



NOTES:

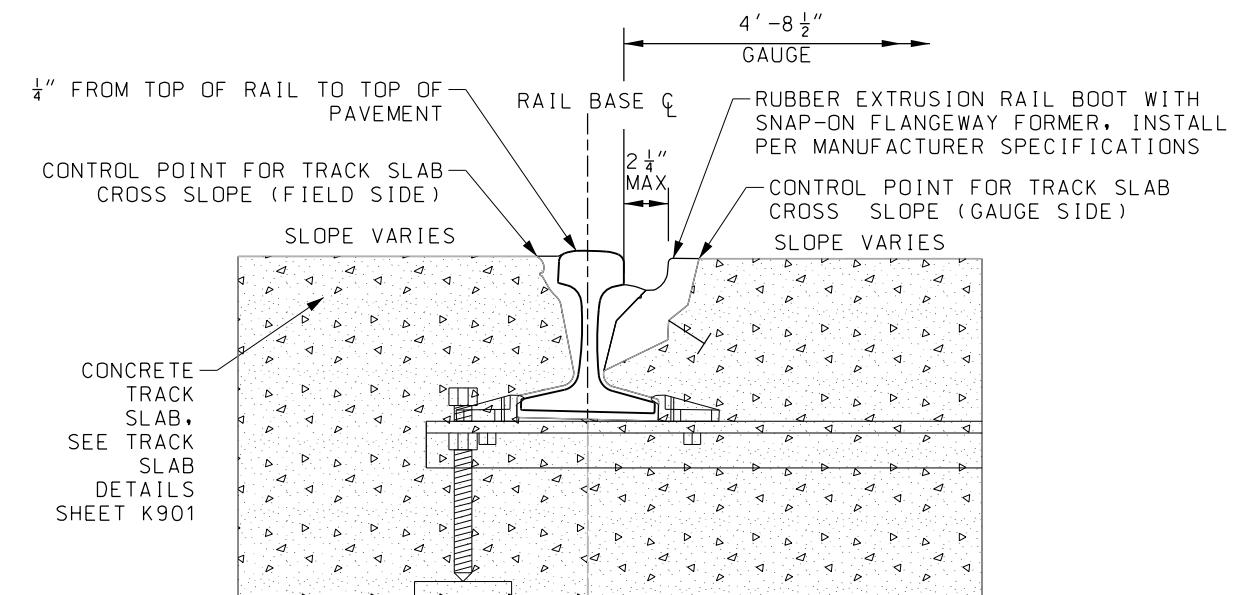
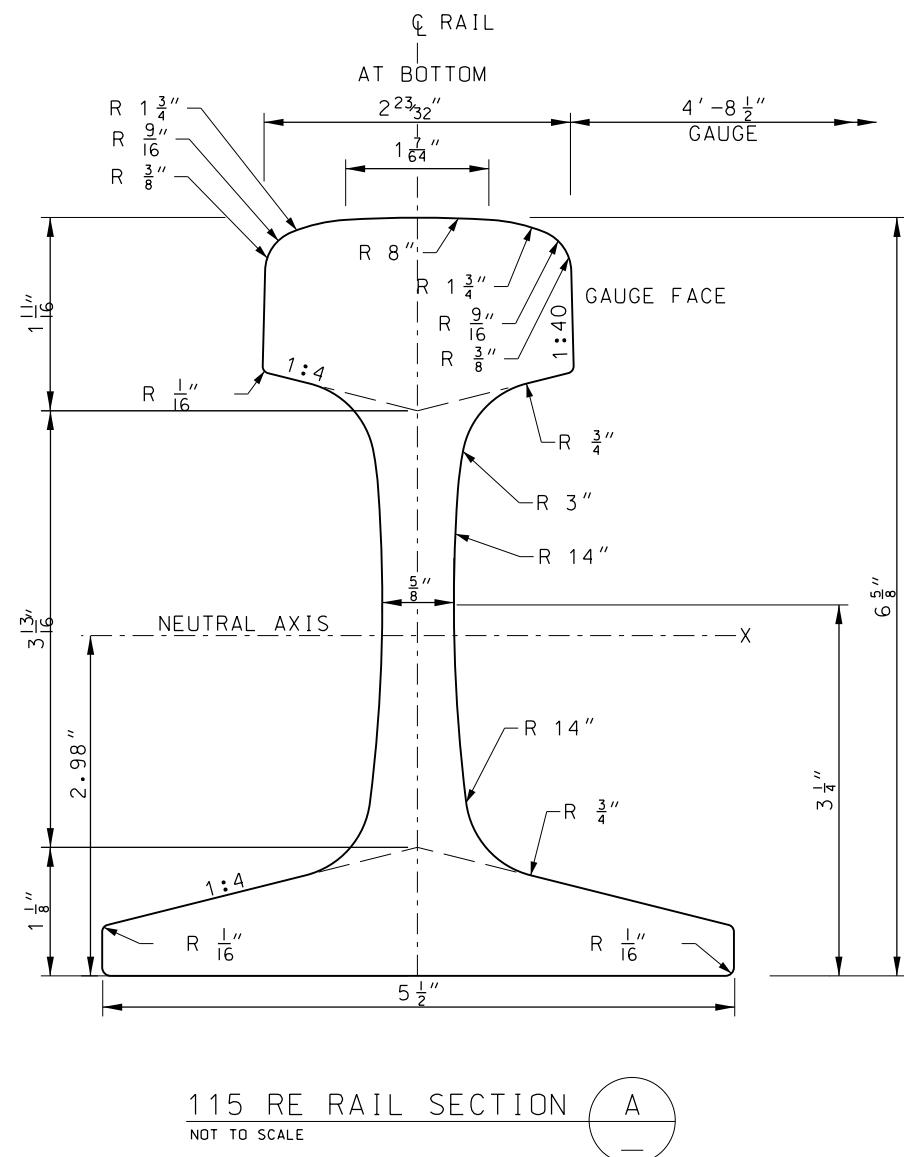
- SEE CIVIL DRAWINGS FOR SAWCUT AND PAVING LIMITS.
- TRACK EDGE CROSS-SLOPE (TEX) ARE SHOWN ON K100 SERIES DRAWINGS AND SHALL BE FIELD ADJUSTED TO MINIMIZE ROADWAY REGRADING. COORDINATE WITH ENGINEER FOR APPROVAL. CROSS-SLOPES ADJACENT TO TRAVEL LANES NOT TO EXCEED 5%, UNLESS ADJACENT TO PARKING LANE OR CURB, WITHOUT APPROVAL OF ENGINEER.
- CONTRACTOR TO SUBMIT TRACK APPURTENANCES (GAUGE TIE, BOOT, FASTENERS, ETC.) FOR REVIEW AND APPROVAL BY ENGINEER PRIOR TO FABRICATION.
- ALL TRACK SHALL HAVE ZERO CANT UNLESS OTHERWISE SPECIFIED.
- REFER TO PROJECT GEOTECHNICAL REPORT FOR ENGINEERING RECOMMENDATIONS REGARDING UNSUITABLE MATERIAL. SUBMIT OVER EXCAVATION BACKFILL MATERIAL FOR REVIEW AND APPROVAL BY ENGINEER.
- RESTRAINING RAIL REQUIRED FOR ALL HORIZONTAL CURVES WITH A RADIUS LESS THAN 400' FOR 115 RE TRACK.
- SEE SYSTEM WIDE ELECTRICAL PLANS FOR THE REQUIRED SYSTEM ELEMENTS INCLUDING DUCT BANKS, INSULATED JOINTS, CROSS BONDING, NEGATIVE RETURN, AND OTHER SYSTEM APPURTENANCES THAT INTERFACE WITH TRACK/CIVIL WORK.
- e IS THE CROSS SLOPE BETWEEN THE RAILS. 0% (TYP). SEE K101 TO K148 DRAWINGS FOR "e" VALUE

- TIE NEEDS TO HAVE ADEQUATE WEEP HOLES. CONTRACTOR TO TAKE EXTRA CARE IN VIBRATING BELOW THE TIE TO ENSURE THERE IS FULL CONCRETE CONSOLIDATION ALL AROUND THE TIE.
- SUBGRADE REQUIRED TO MEET COMPACTION REQUIREMENTS OUTLINED IN THE GEOTECHNICAL REPORT.
- WHERE ADJACENT TO CONCRETE PAVEMENT CONTRACTOR MAY POUR ROADWAY PAVEMENT MONOLITHICALLY WITH TRACK SLAB.

REV	DATE	DESCRIPTION	DESIGNED BY	JWR	CHECKED BY	RPB	DRAWN BY	MMO	CHECKED BY	RPB	APPROVED BY	NKS	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	SCALE FOR 22"x34": NOT TO SCALE FILENAME: K901.dwg CONTRACT NO.: ##### VOLUME: 2 DRAWING NO.: K901	SHEET NO.: 18
PLOT DATE: 8/21/2019	251:10 PM		DATE	07/31/2019	RideKC STREETCAR											
NOT FOR CONSTRUCTION																

KANSAS CITY STREETCAR MAIN STREET EXTENSION

VEHICLE MAINTENANCE FACILITY
TRACK SLAB DETAILS



PRELIMINARY PLANS - 30% **DATE: 08-27-2011**

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KANSAS CITY STREETCAR MAIN STREET EXTENSION

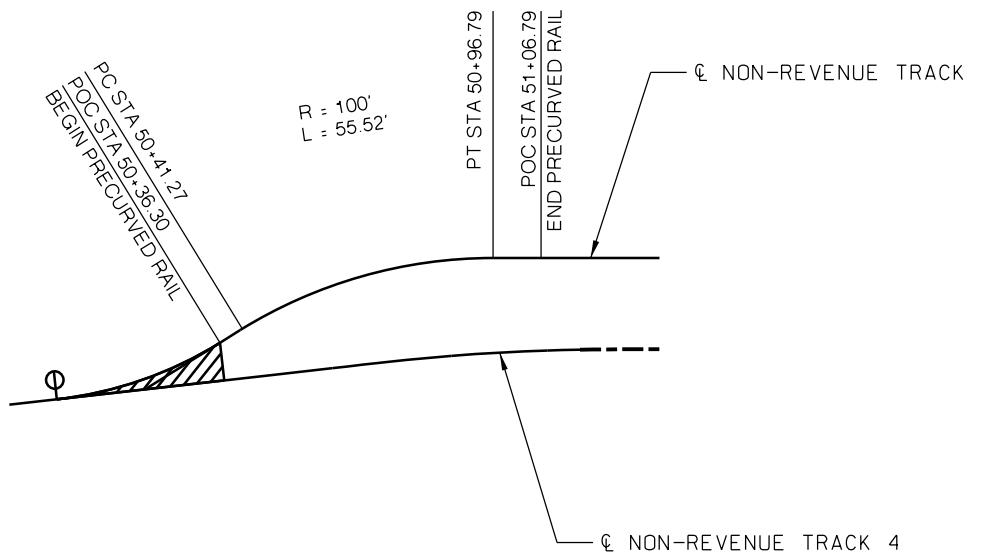
VEHICLE MAINTENANCE FACILITY 115 RF RAIL SECTIONS

SCALE FOR 22" x 34":
NOT TO SCALE
FILENAME:
K902.dgn
CONTRACT NO.:
XXXXXXXXXXXX
VOLUME:
2
DRAWING NO.: **K902** SHEET NO.: **19**

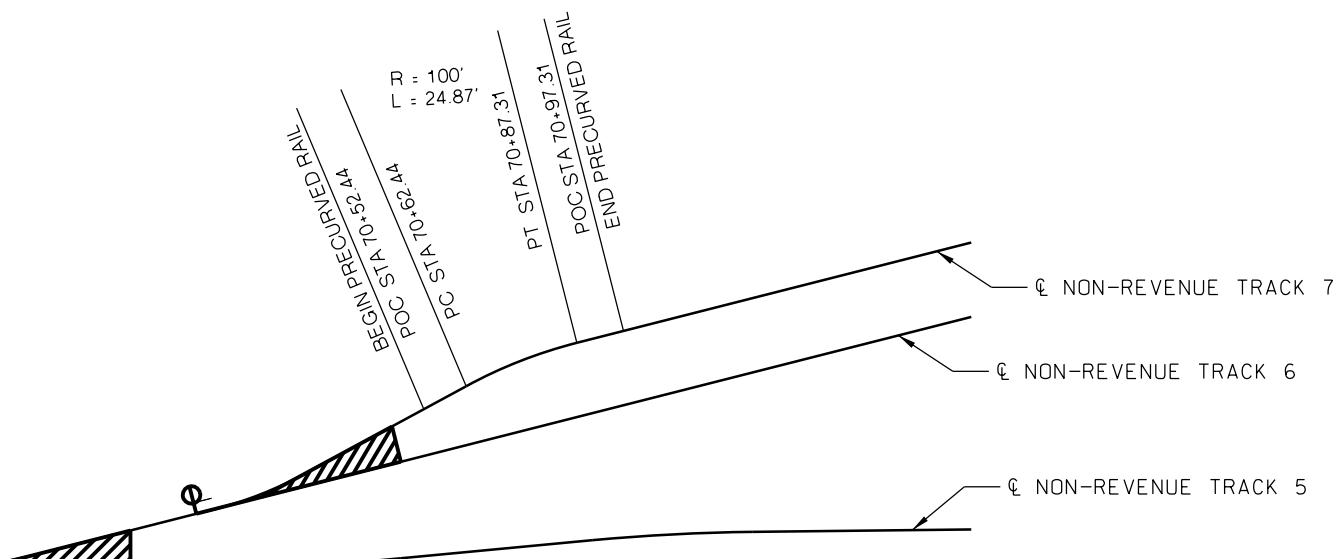
GENERAL NOTES

1. CURVE GEOMETRY SHOWN IS FOR TRACK CENTERLINE

2. SUPPLIERS SHALL SUBMIT SHOP DRAWINGS FOR ENGINEERS APPROVAL, PER SPECIFICATIONS.



DETAIL A



DETAIL B



PRELIMINARY PLANS - 30%

DATE: 08-27-2019

12

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10450 Holmes Road
Suite 600

Suite 600
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10 of 10

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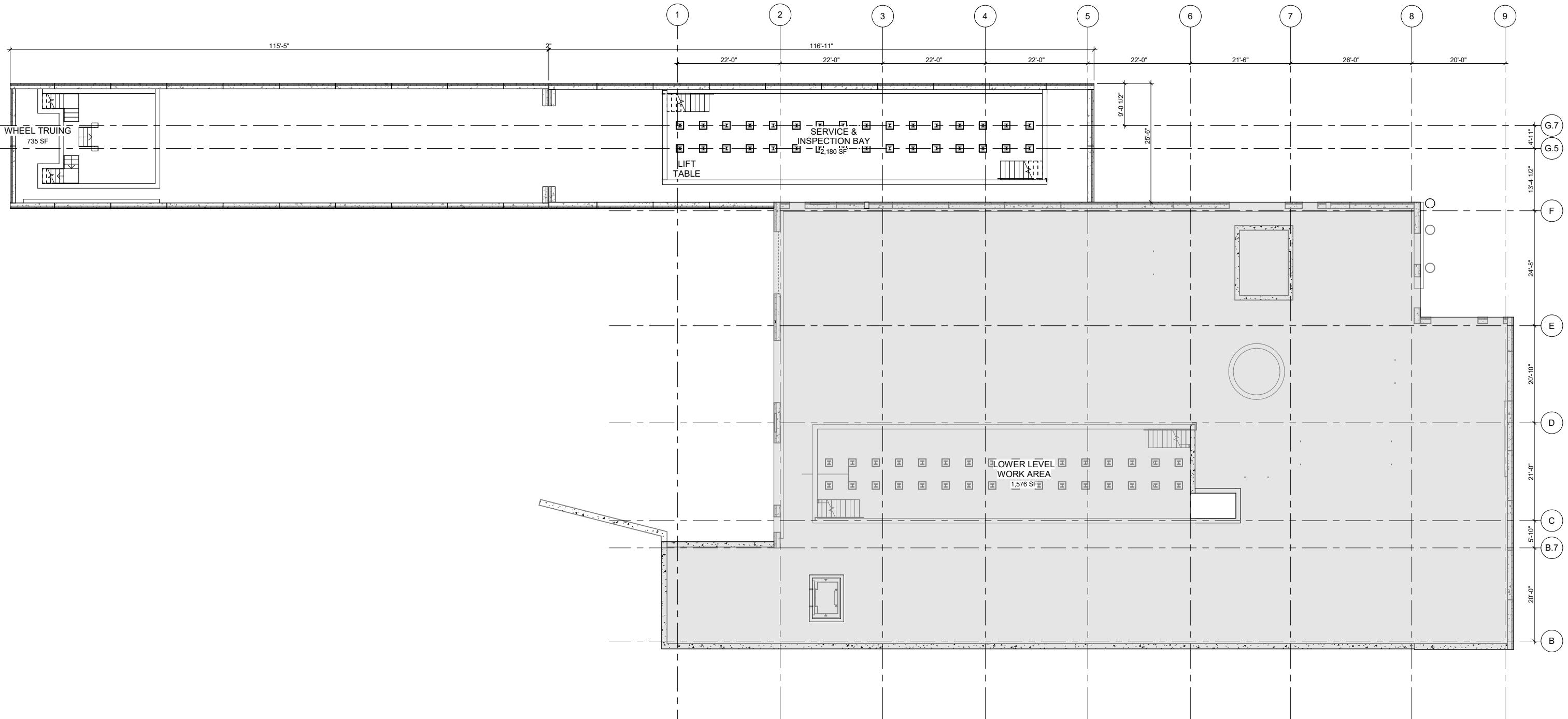
KANSAS CITY STREETCAR MAIN STREET EXTENSION

VEHICLE MAINTENANCE FACILITY

HORIZONTAL PRECURVED

RAIL DETAILS

SCALE FOR 22" x 34":
4. 1" = 20'
FILENAME:
K903.dgn
CONTRACT NO.:
H H H H H H H H
VOLUME:
2
DRAWING NO.: **K903** SHEET NO.: **20**



1 LLWA FLOOR PLAN
3/32" = 1'-0"

Existing
New Construction

0 5.33' 10.67' 21.33' N

REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019

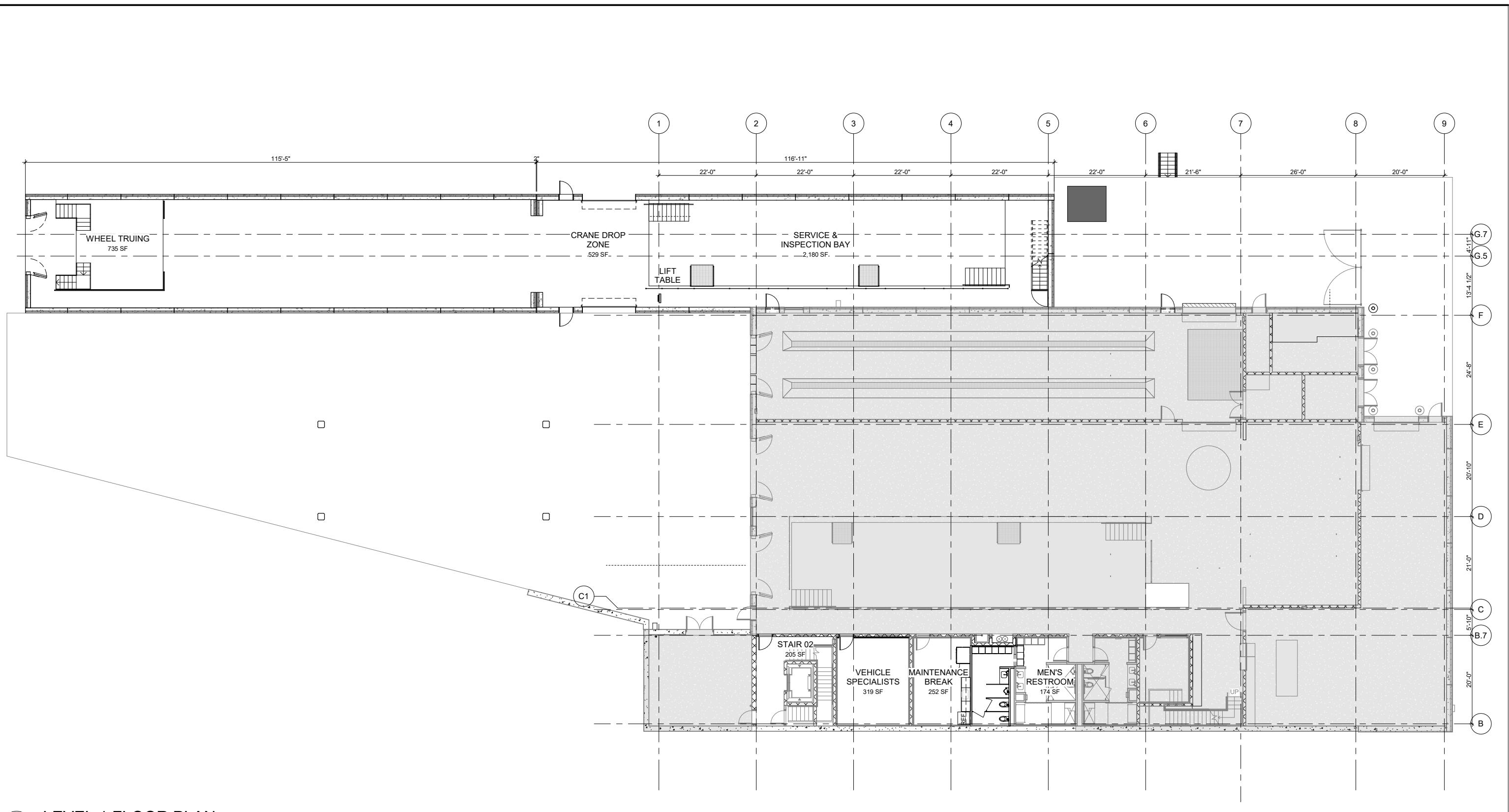


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PRELIMINARY PLANS - 30%
DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
OVERALL FLOOR PLAN
LOWER LEVEL WORK AREA

SCALE FOR 22"x34":
As indicated
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A001
SHEET NO.: 21



REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019

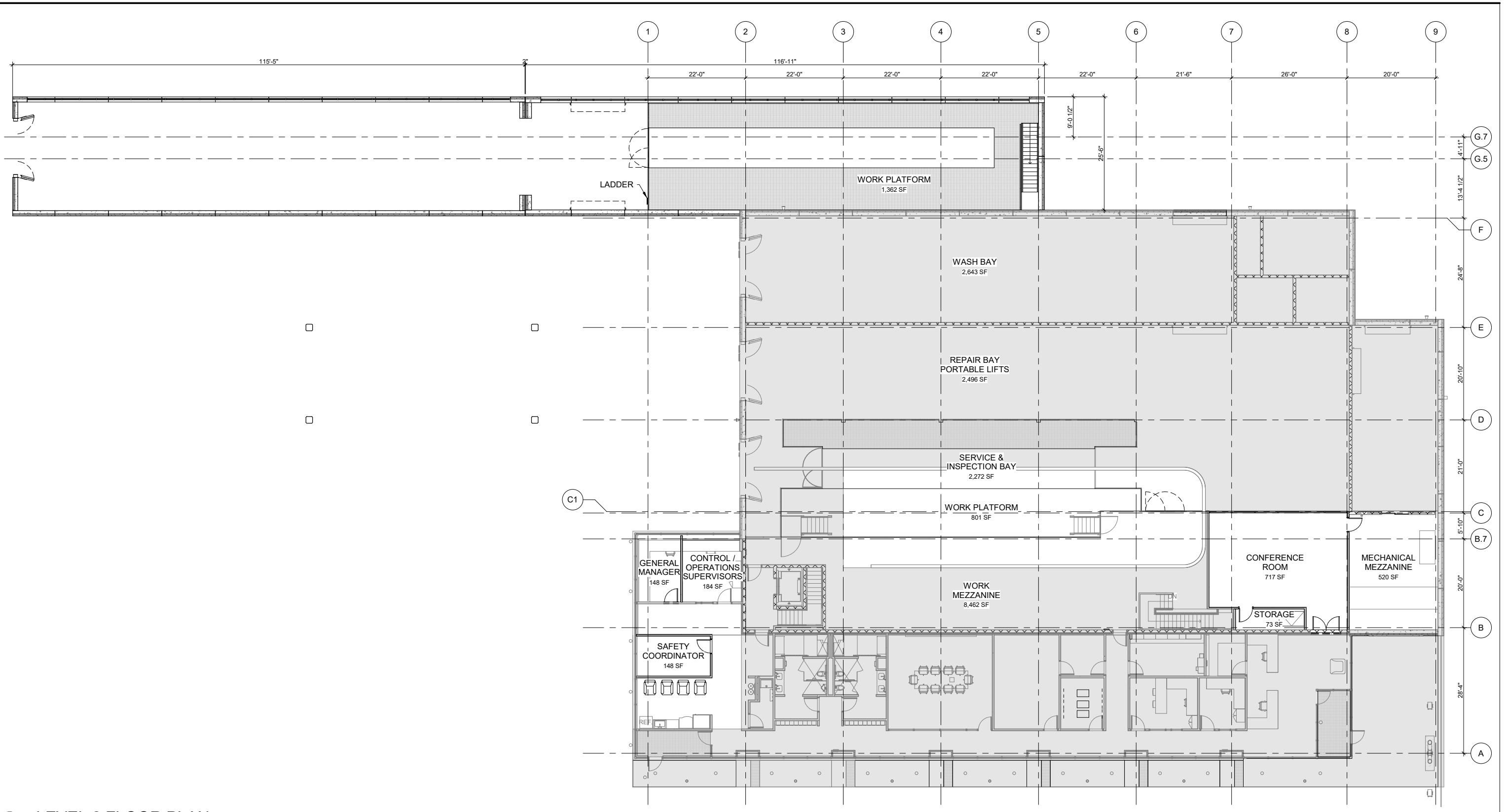


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PRELIMINARY PLANS - 30%
DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION & RENOVATION
LEVEL 1

SCALE FOR 22"x34":
As indicated
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A002
SHEET NO.: 22



REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019

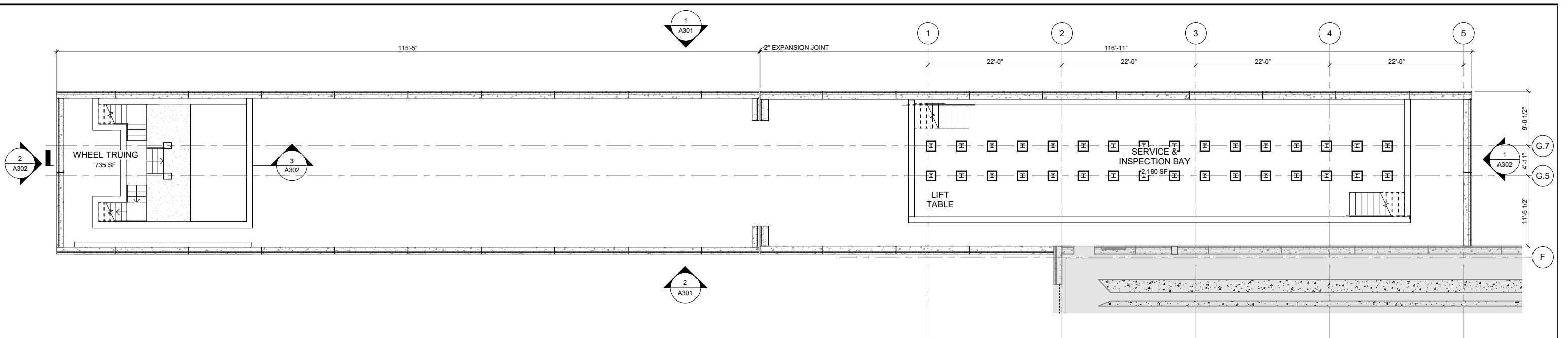


NOT FOR CONSTRUCTION

PRELIMINARY PLANS - 30% DATE: 08-27-2019

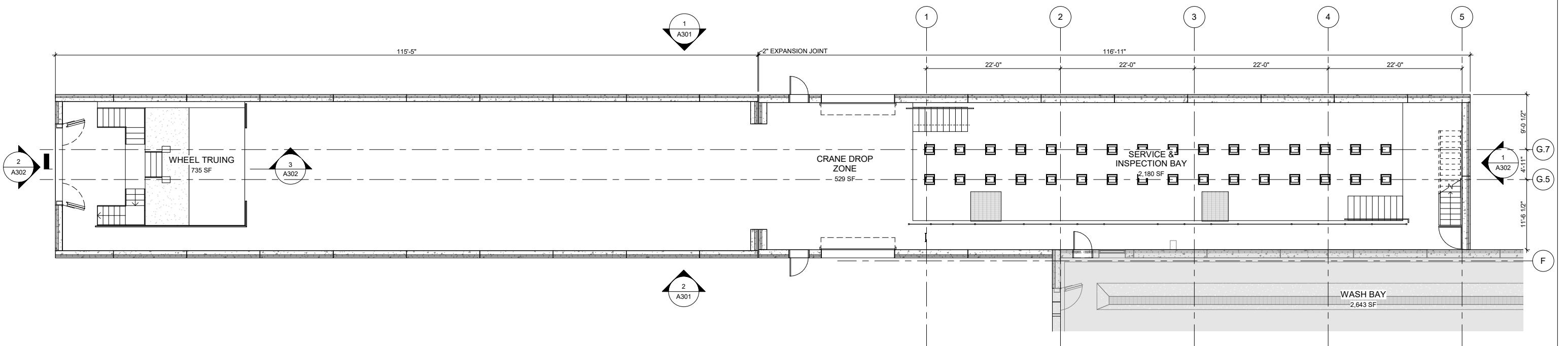
KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION & RENOVATION
LEVEL 2

SCALE FOR 22"x34":
As indicated
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A003
SHEET NO.: 23



2 EXPANSION LLWA FLOOR PLAN

1/8" = 1'-0"



1 EXPANSION LEVEL 1 FLOOR PLAN

1/8" = 1'-0"

Existing
New Construction

0 2.00' 4.00' 8.00'
N

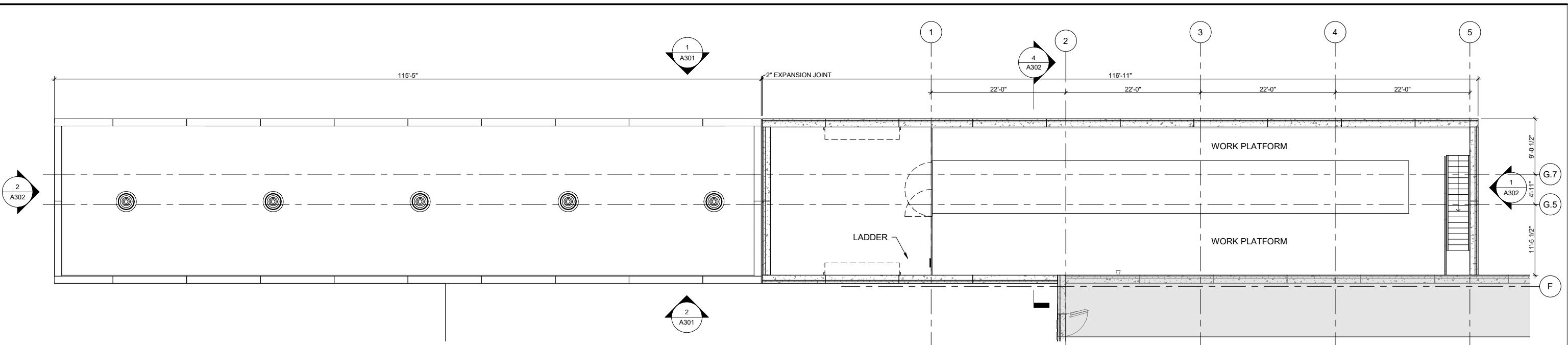
REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019
PLOT DATE: 8/27/2019 10:26:45 AM				



PRELIMINARY PLANS - 30%
DATE: 08-27-2019
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Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856
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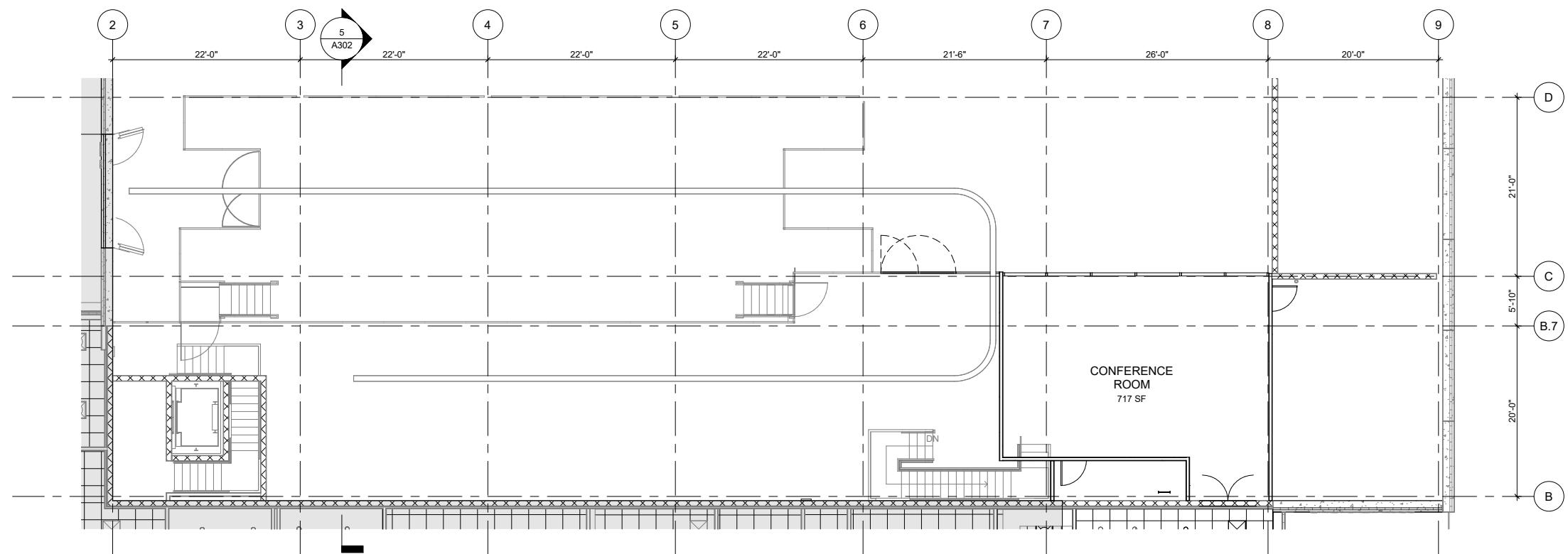
KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION FLOOR PLAN
LEVEL 1 AND LOWER LEVEL WORK AREA

SCALE FOR 22'x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A102
SHEET NO.: 25



2 EXPANSION LEVEL 2 FLOOR PLAN

1/8" = 1'-0"



1 EXISTING LEVEL 2 BRIDGE CRANE

1/8" = 1'-0"

Existing
New Construction

0 2.00' 4.00' 8.00'



REV	DATE	DESCRIPTION
		DESIGNED BY JT
		CHECKED BY SP
		DRAWN BY JT
		CHECKED BY SP
		APPROVED BY NKS
		DATE: 8/27/2019
		PLOT DATE: 8/27/2019 10:26:47 AM

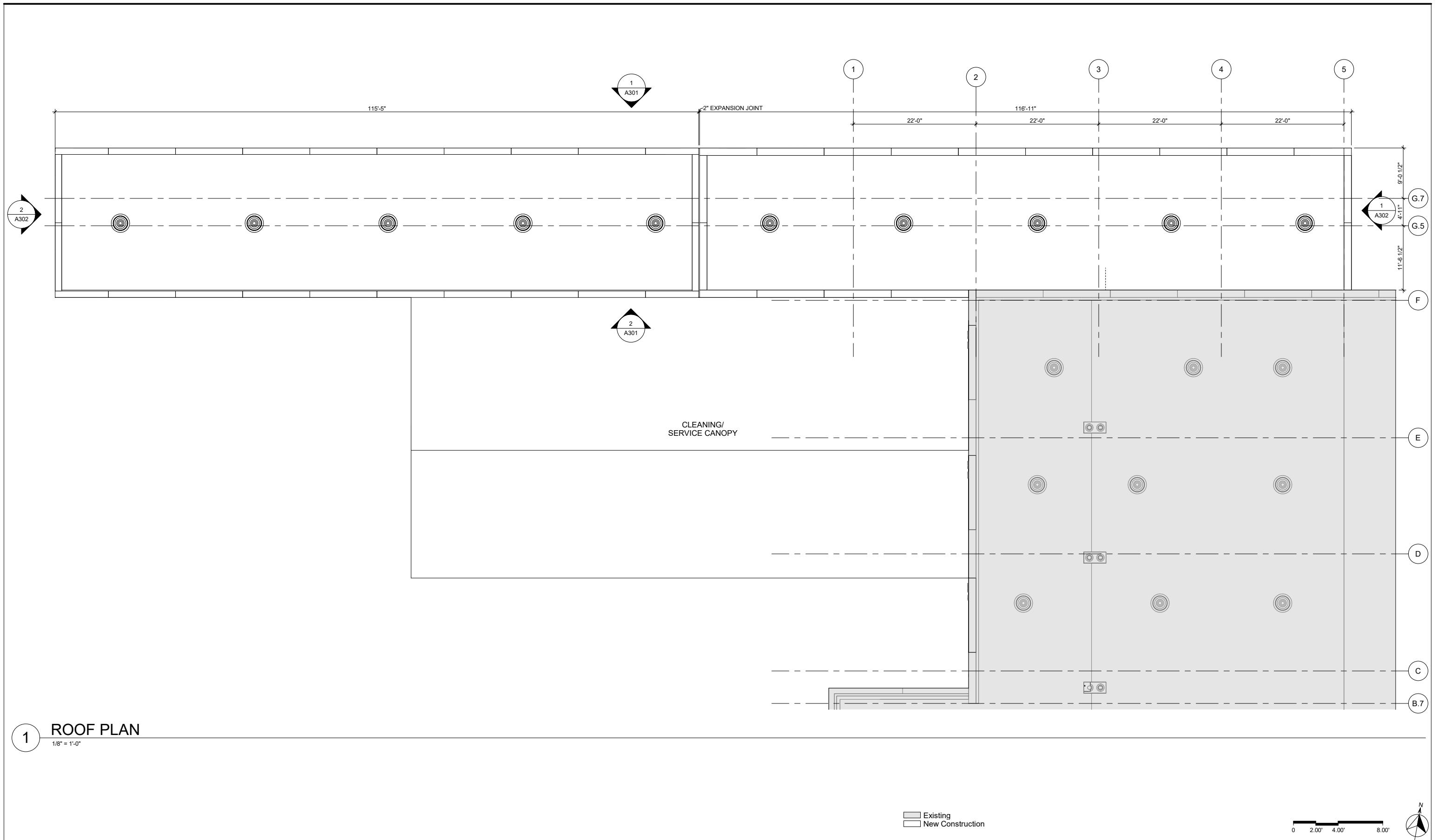


PRELIMINARY PLANS - 30%
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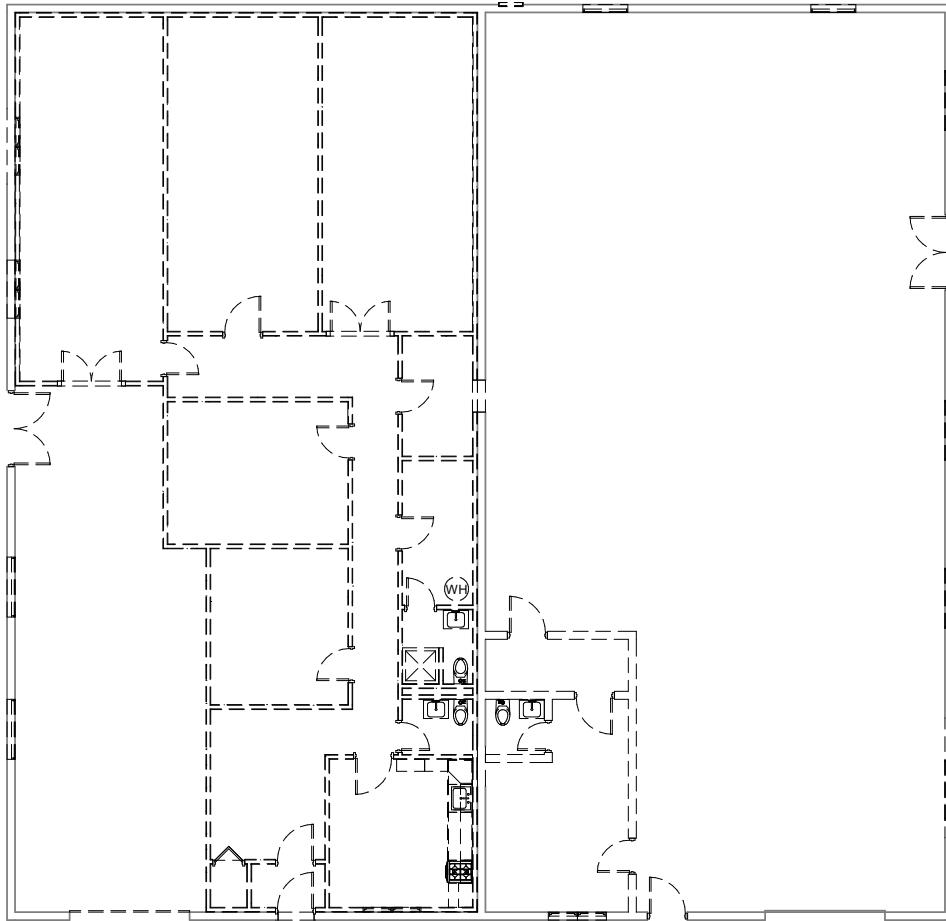
NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION FLOOR PLAN
LEVEL 2

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A103
SHEET NO.: 26

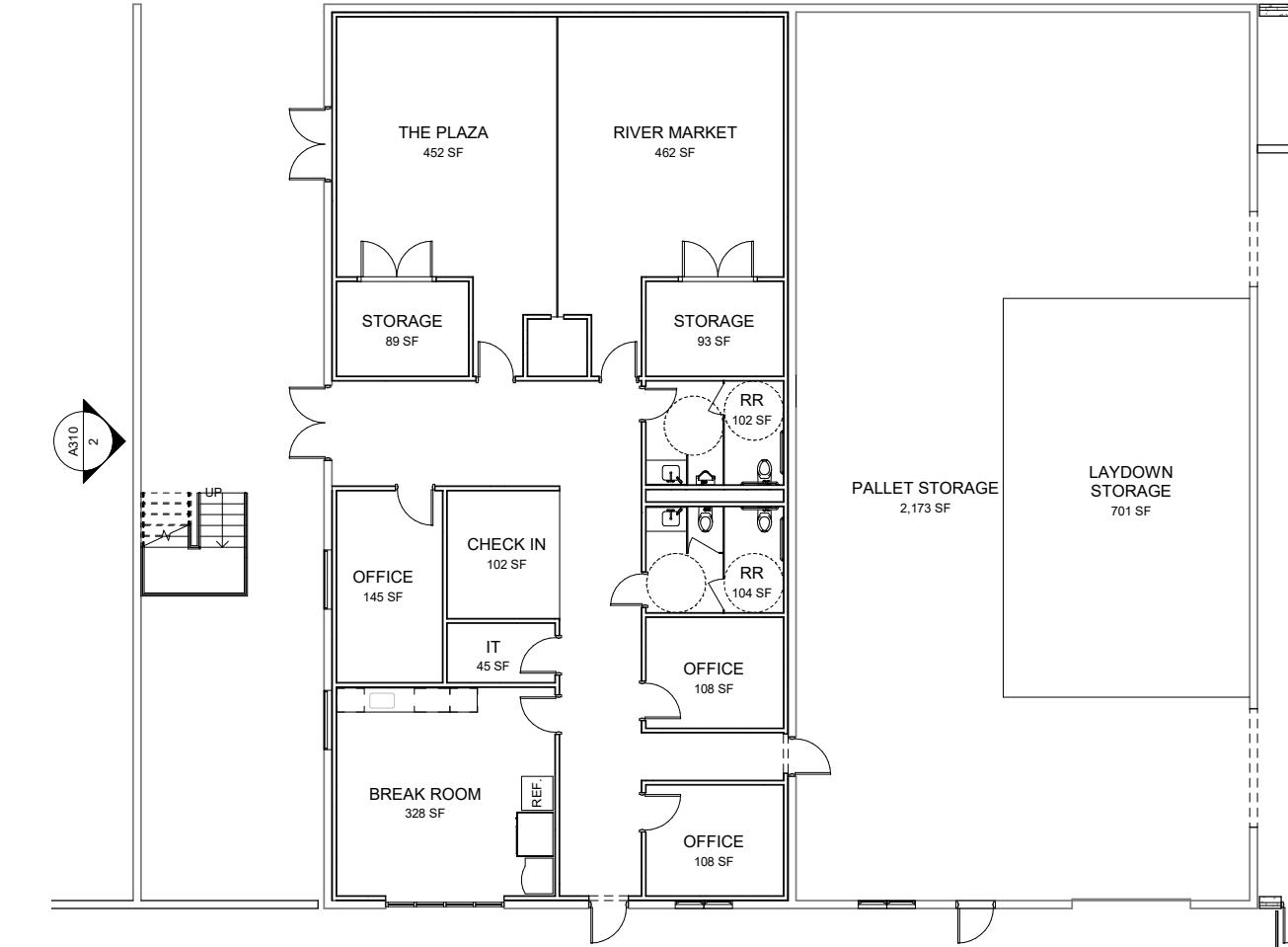


REV	DATE	DESCRIPTION	DESIGNED BY	JT	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22'x34": 1/8" = 1'-0"
			CHECKED BY	SP			VEHICLE MAINTENANCE FACILITY	FILENAME:
			DRAWN BY	JT			EXPANSION ROOF PLAN	CONTRACT NO.:
			CHECKED BY	SP				10147326
			APPROVED BY	NKS				VOLUME:
			DATE:	8/27/2019				DRAWING NO.: A104
								SHEET NO.: 27
NOT FOR CONSTRUCTION								



1 WAREHOUSE - EXISTING AND DEMO

1/8" = 1'-0"



2 WAREHOUSE - RENOVATION

1/8" = 1'-0"

0 2.00' 4.00' 8.00'



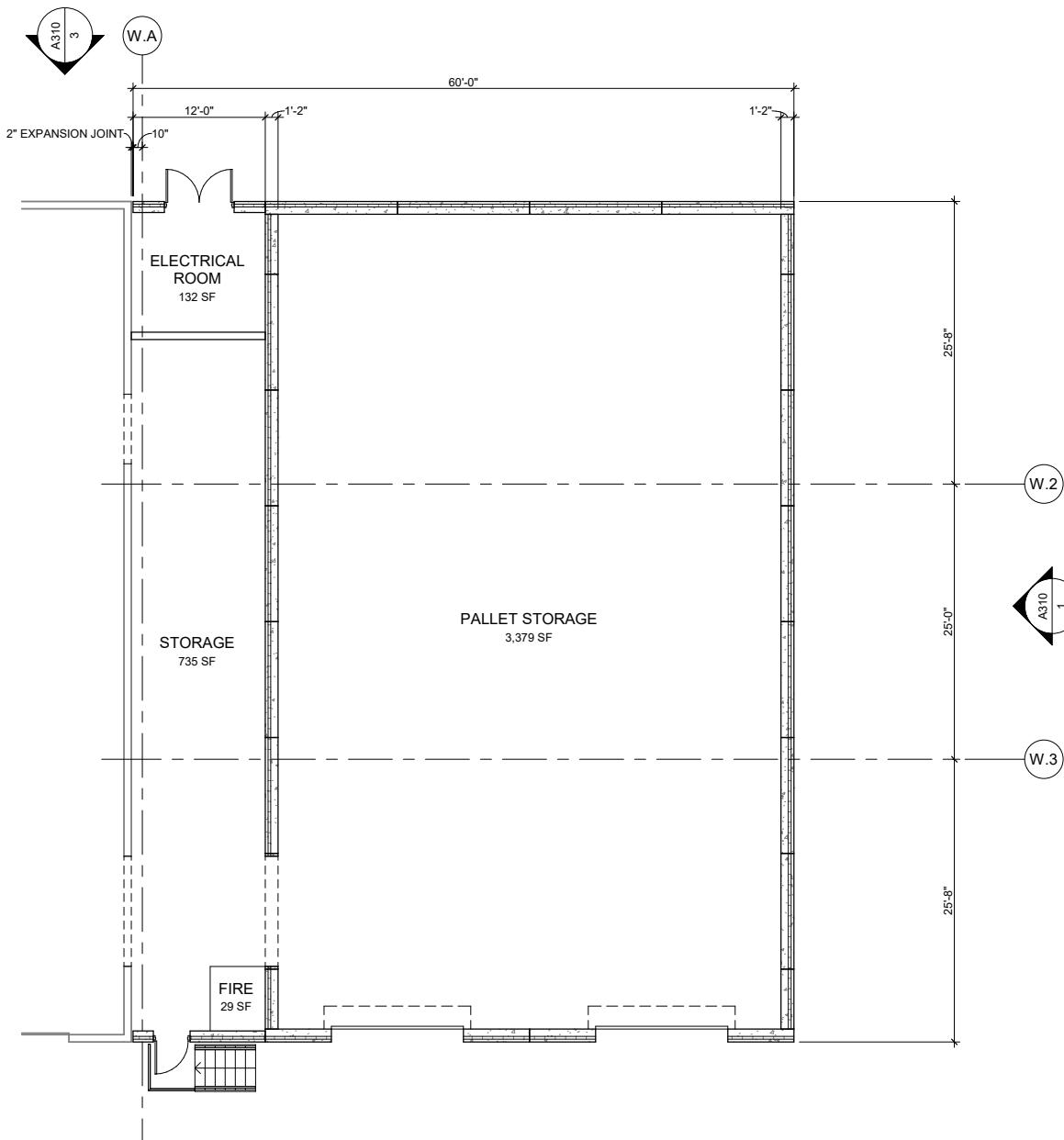
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			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019



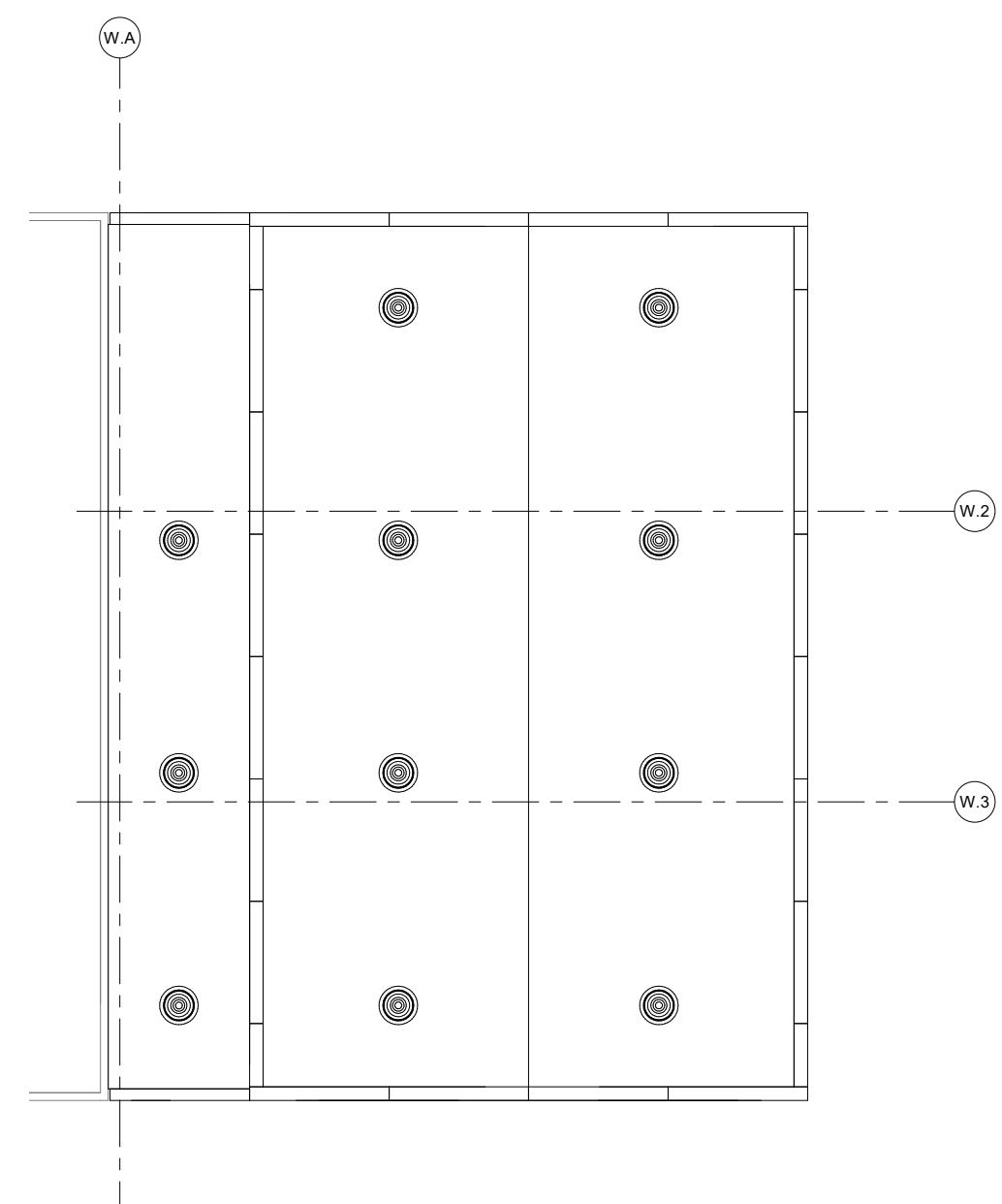
PRELIMINARY PLANS - 30%		DATE: 08-27-2019
HDR 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856		
NOT FOR CONSTRUCTION		

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
WAREHOUSE LEVEL 1
DEMO AND RENOVATION

SCALE FOR 22"x34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	A111
SHEET NO.:	28



1 WAREHOUSE - EXPANSION
1/8" = 1'-0"



2 WAREHOUSE EXP. ROOF
1/8" = 1'-0"

0 2.00' 4.00' 8.00'



REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019

PLOT DATE: 8/27/2019 10:26:56 AM

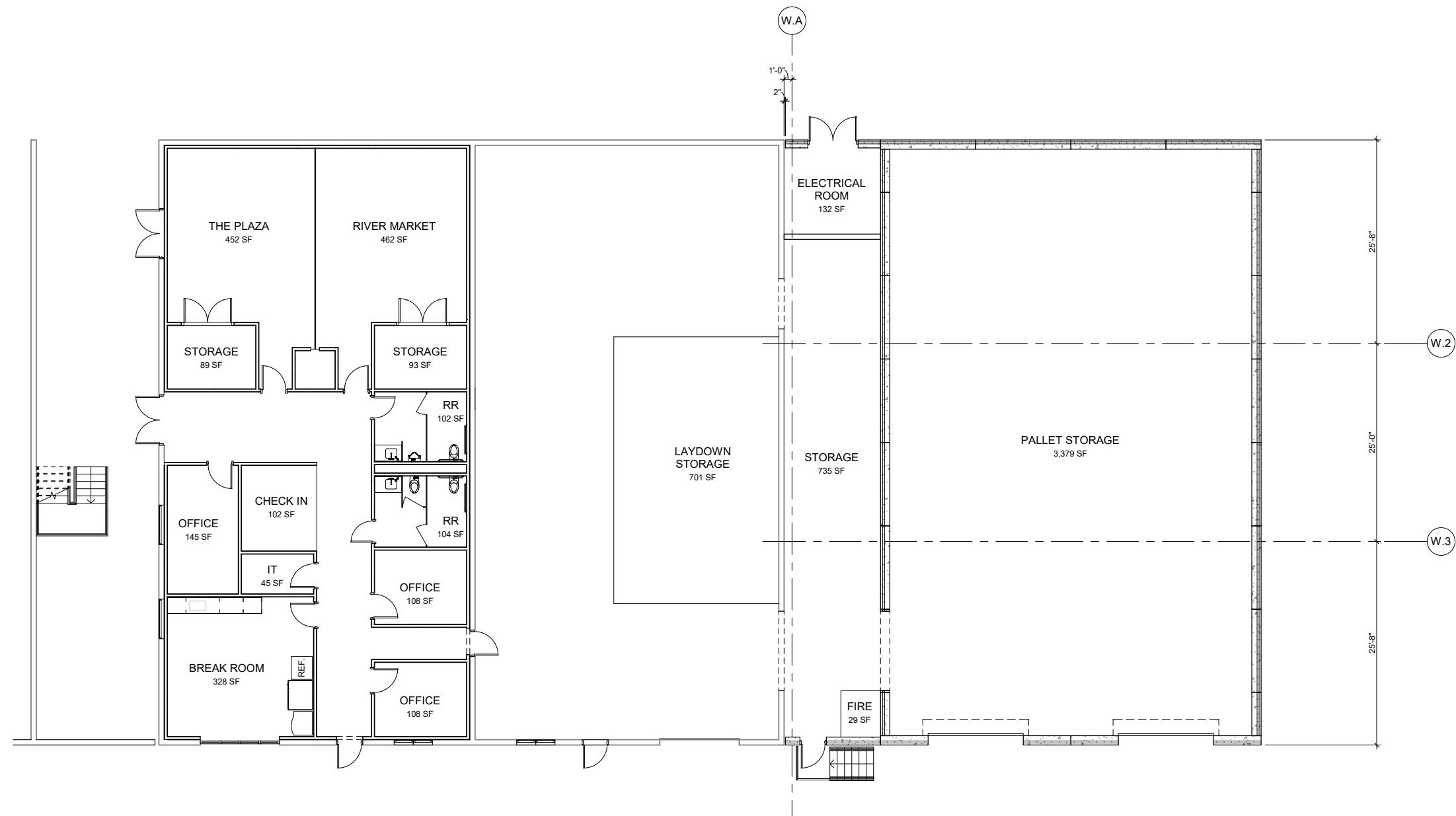


PRELIMINARY PLANS - 30%
DATE: 08-27-2019
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
WAREHOUSE EXPANSION
FLOOR AND ROOF PLAN

SCALE FOR 22"x34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	A112
SHEET NO.:	29



REV	DATE	DESCRIPTION
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		CHECKED BY SP
		DRAWN BY JT
		CHECKED BY SP
		APPROVED BY NKS
		DATE: 8/27/2019

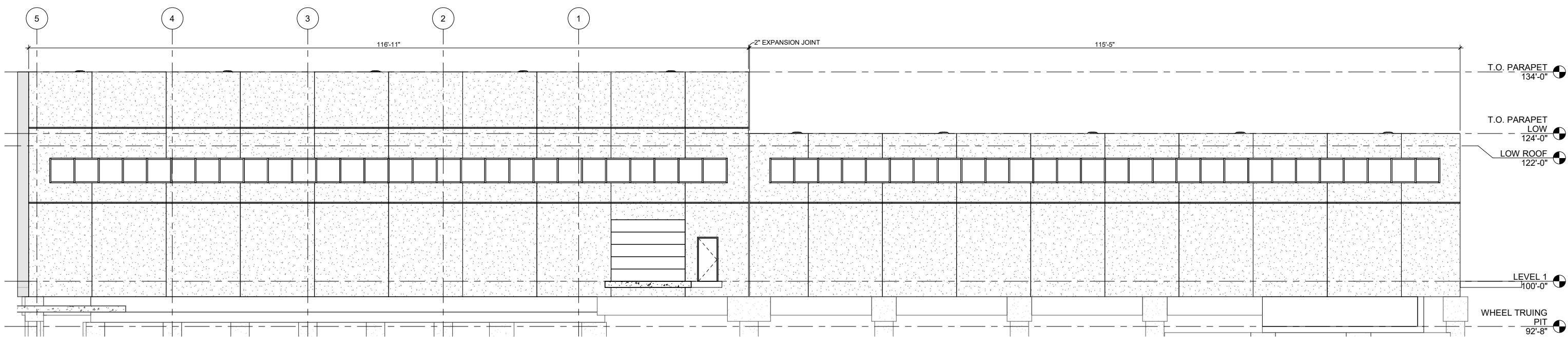


PRELIMINARY PLANS - 30%	DATE: 08-27-2019
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NOT FOR CONSTRUCTION

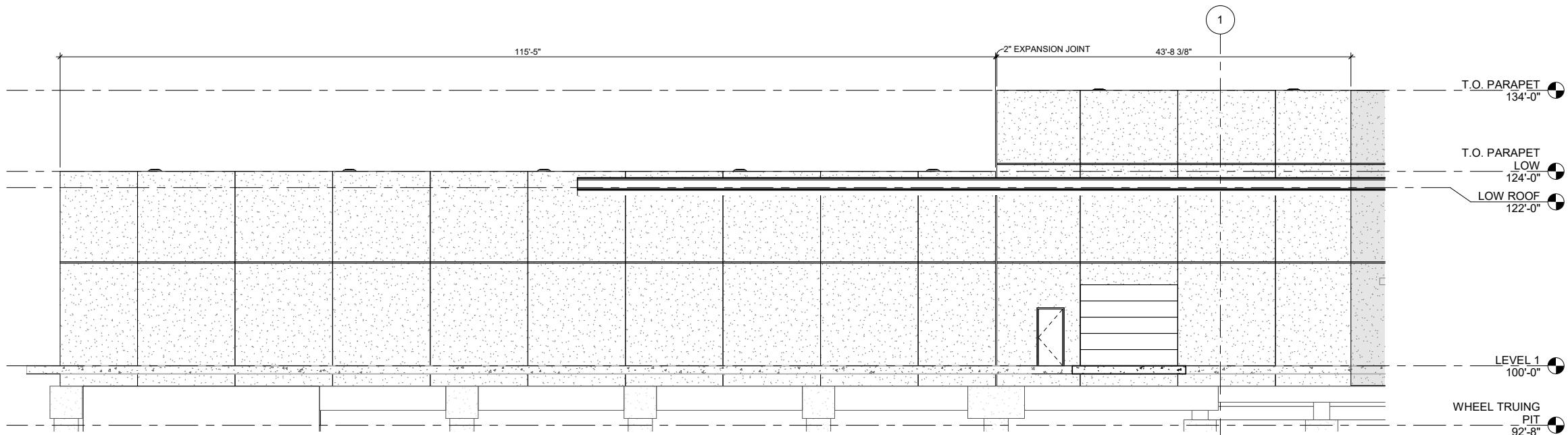
KANSAS CITY STREETCAR MAIN STREET EXTENSION
 VEHICLE MAINTENANCE FACILITY
 WAREHOUSE OVERALL PLAN
 LEVEL 1

SCALE FOR 22'x34":	
1/8" = 1'-0"	
FILENAME:	
CONTRACT NO.:	
10147326	
VOLUME:	
DRAWING NO.:	
A113	
SHEET NO.:	30



1 EXPANSION NORTH ELEVATION

1/8" = 1'-0"



2 EXPANSION SOUTH ELEVATION

1/8" = 1'-0"

Existing
New Construction

0 2.00' 4.00' 8.00'

REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019



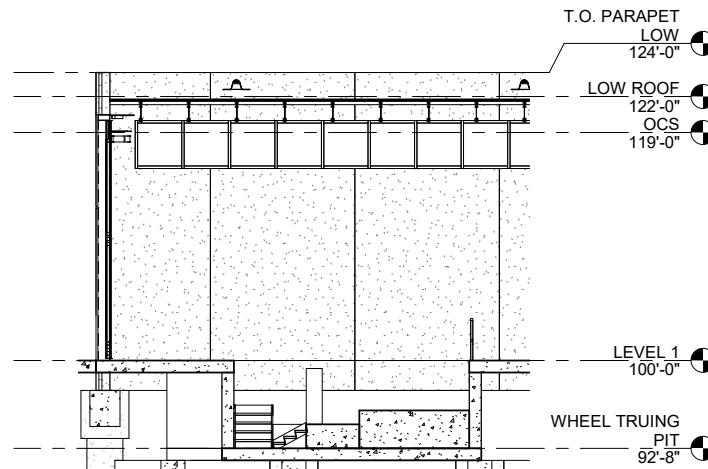
PRELIMINARY PLANS - 30%
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

DATE: 08-27-2019

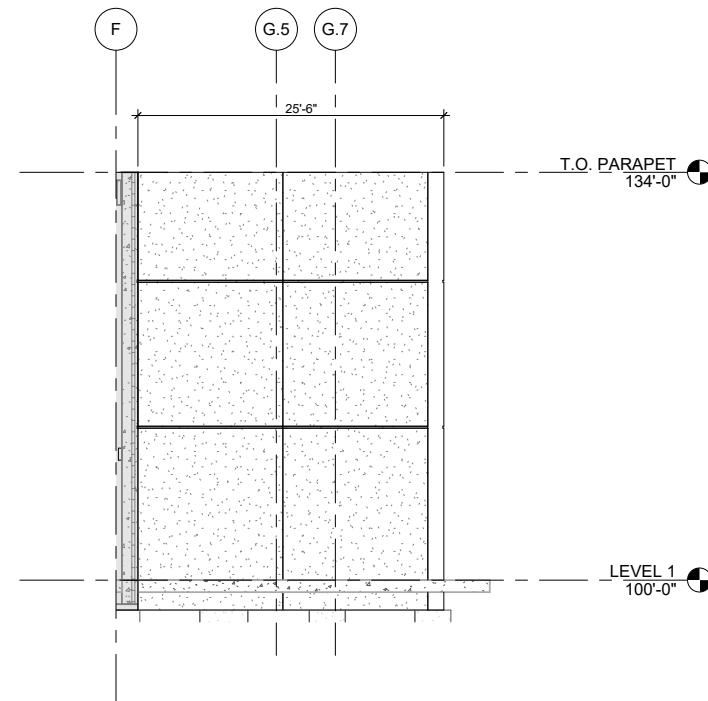
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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION ELEVATIONS
SHEET 1 OF 2

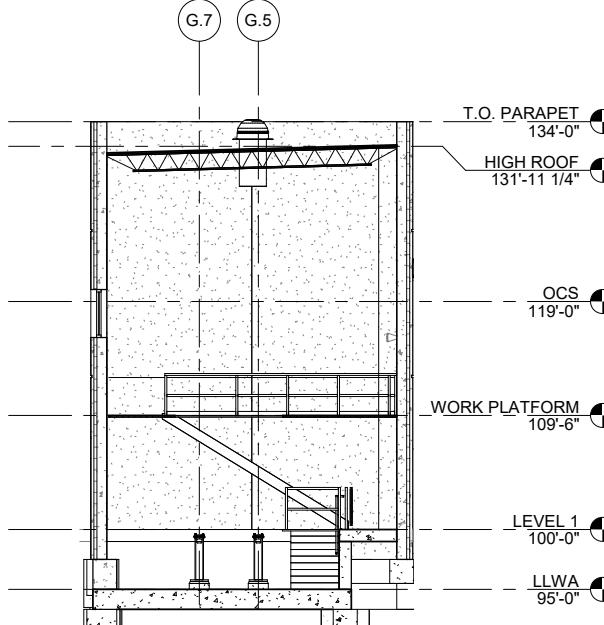
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FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A301
SHEET NO.: 31



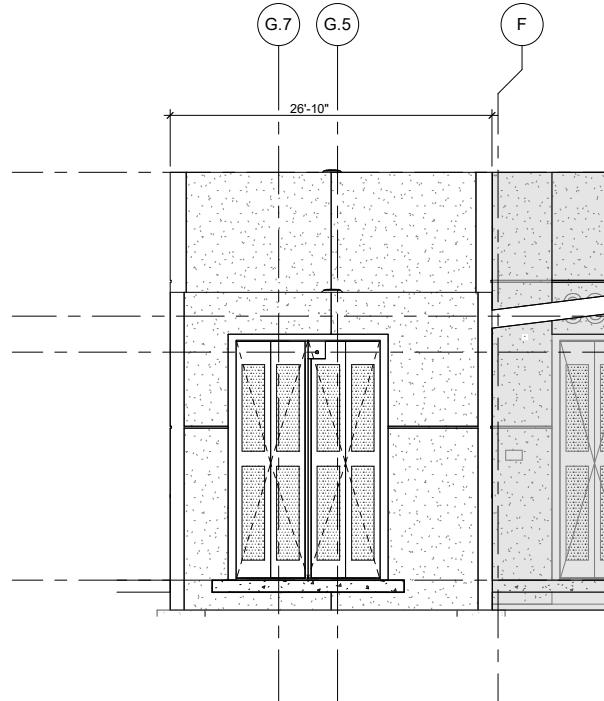
3 WHEEL TRUING PIT SECTION



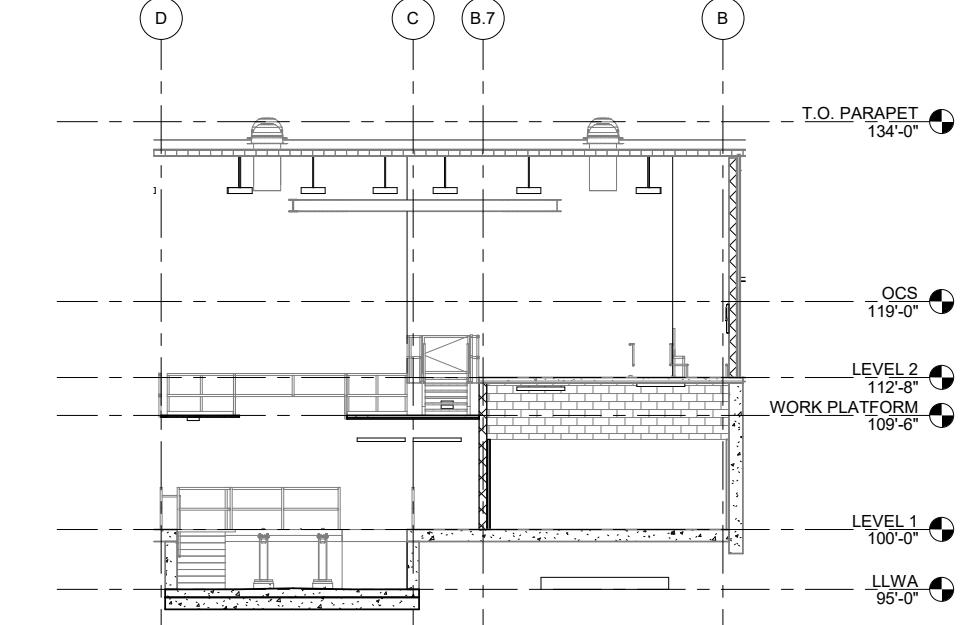
1 EXPANSION EAST ELEVATION



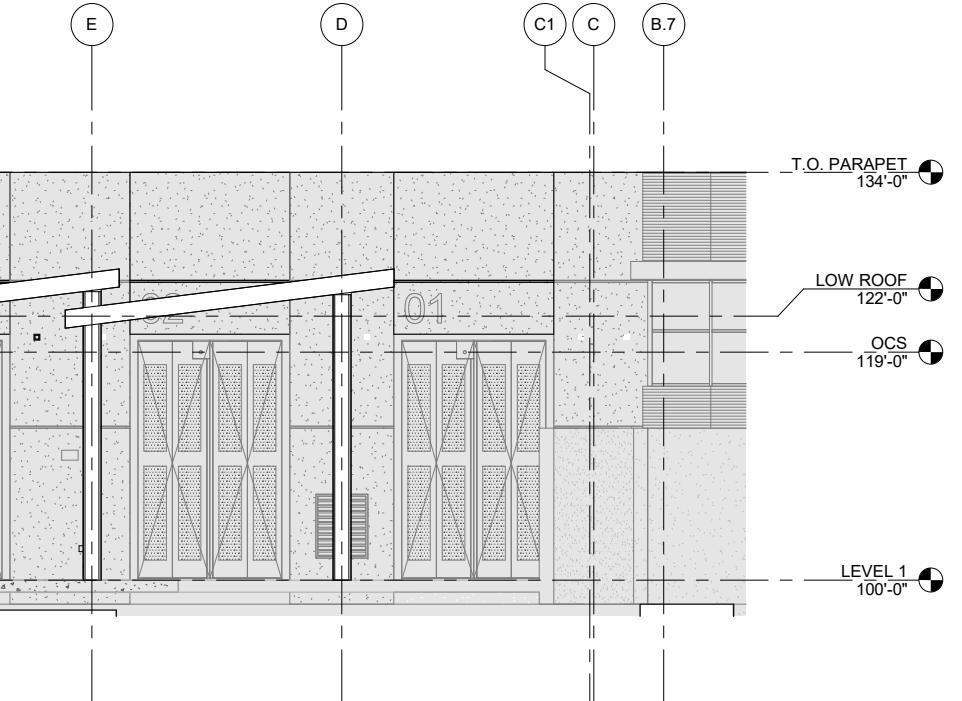
4 NEW S&I BAY SECTION



2 EXPANSION WEST ELEVATION



5 EXISTING S&I BAY SECTION



Existing
New Construction

0 2.00' 4.00' 8.00'

REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
			DRAWN BY	JT
			CHECKED BY	SP
			APPROVED BY	NKS
			DATE:	8/27/2019



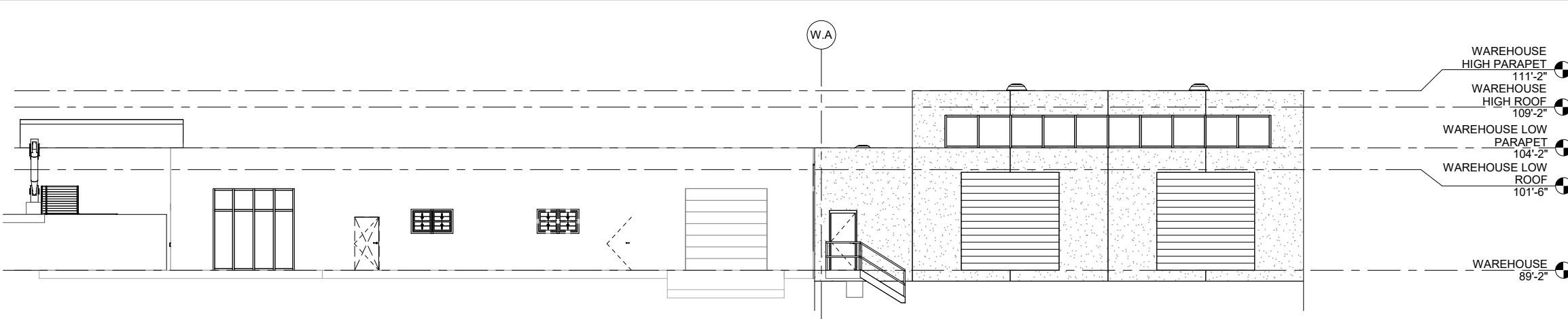
PRELIMINARY PLANS - 30%
FDR
10450 Holmes Road
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Certificate of Authority: 000856

NOT FOR CONSTRUCTION

DATE: 08-27-2019

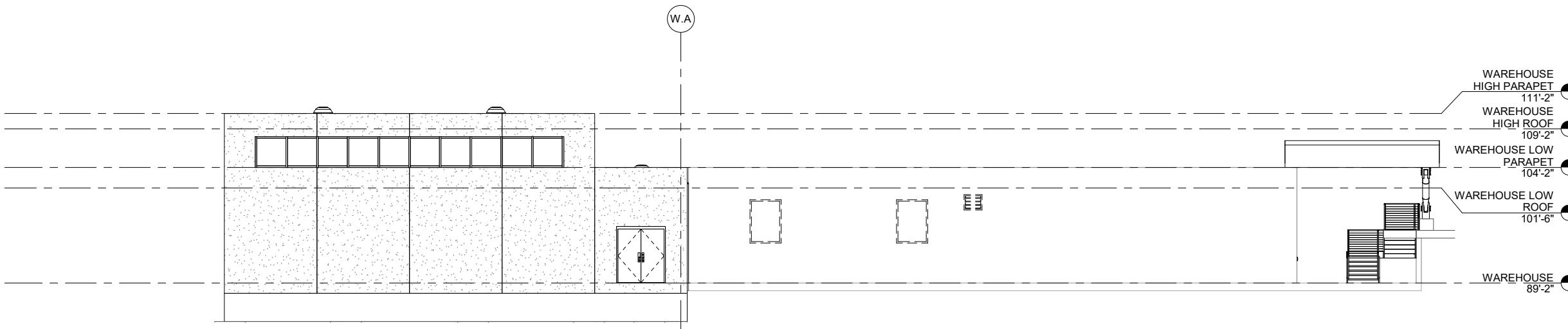
KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION ELEVATIONS
SHEET 2 OF 2

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A302
SHEET NO.: 32



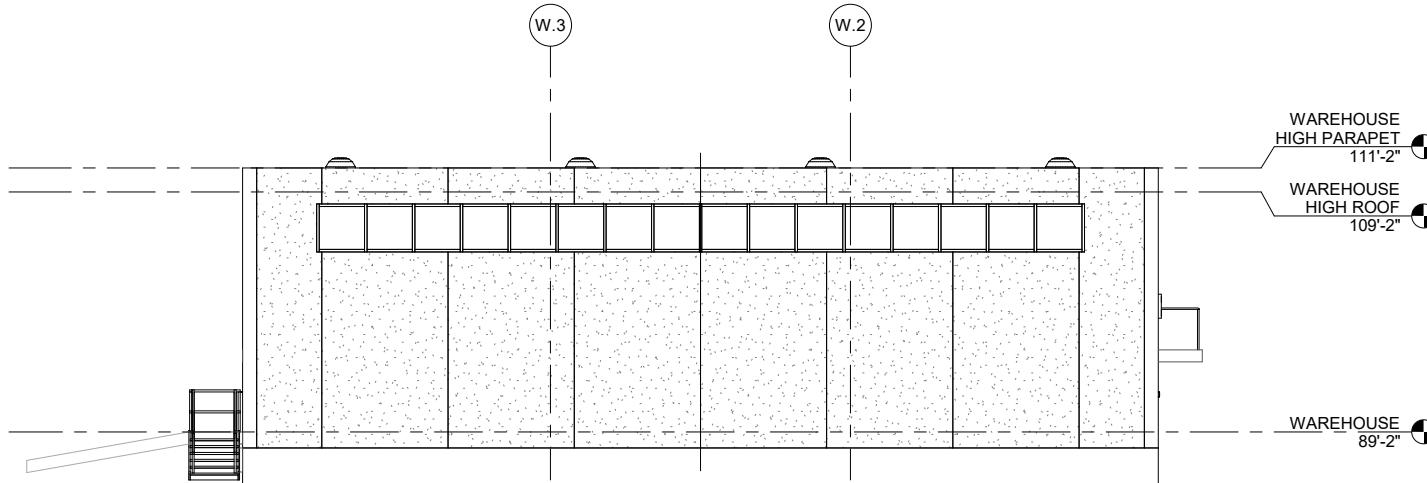
4 WAREHOUSE EAST ELEVATION

1/8" = 1'-0"



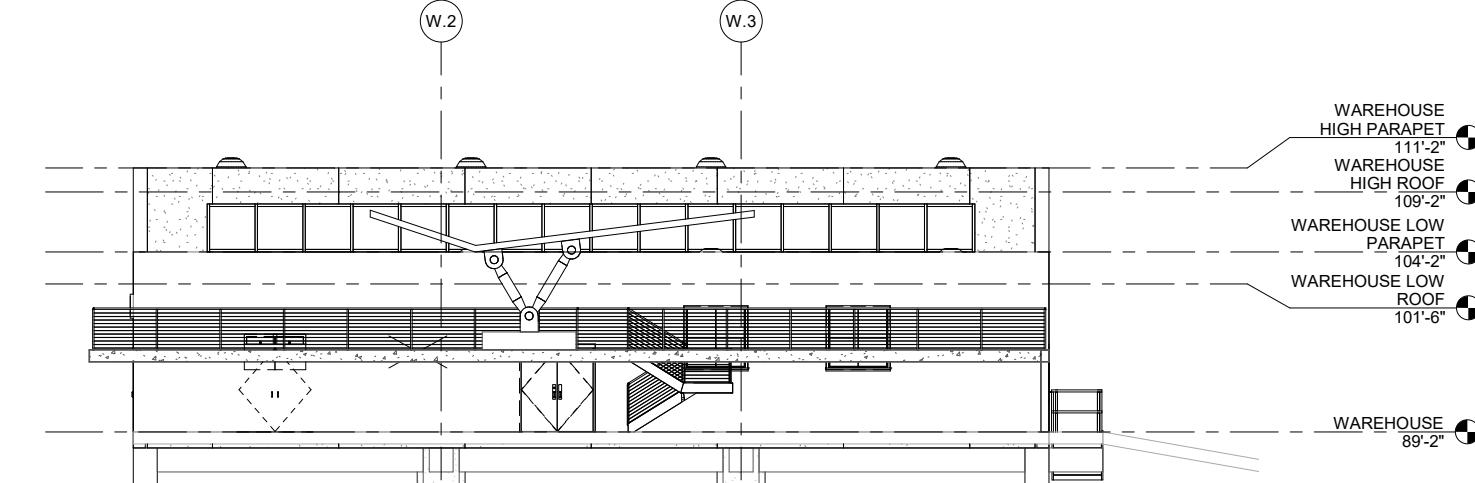
3 WAREHOUSE WEST ELEVATION

1/8" = 1'-0"



1 WAREHOUSE NORTH ELEVATION

1/8" = 1'-0"



2 WAREHOUSE SOUTH ELEVATION

1/8" = 1'-0"

0 2.00' 4.00' 8.00'

REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	SP
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			DATE:	8/27/2019



PRELIMINARY PLANS - 30%	DATE: 08-27-2019
<p>10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856</p>	

NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
WAREHOUSE ELEVATIONS

SCALE FOR 22" x 34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: A310
SHEET NO.: 33

<div style="display: flex; justify-content: space-between;"> <div style="width: 25%;"> <p>APPLICABLE CODES AND STANDARDS</p> <p>1. INTERNATIONAL BUILDING CODE (IBC); 2. 2012 INTERNATIONAL BUILDING CODE 3. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) / STRUCTURAL ENGINEERING INSTITUTE (SEI): ASCE/SEI 7-10, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES 3. AMERICAN CONCRETE INSTITUTE (ACI): ACI 318-11, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI 530-11, BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES 4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC): AISC 360-10, SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS INCLUDING SUPPLEMENT NO. 1 AISC 360-10, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS 5. AMERICAN WELDING SOCIETY (AWS): D1.1-06/D1.3-98/D1.4-05, STRUCTURAL WELDING CODE 6. AMERICAN IRON AND STEEL INSTITUTE (AISI): AISI/NAS-07, NORTH AMERICAN SPECIFICATIONS FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS 7. STEEL INSTITUTE (SDI): DDM-03, DIAPHRAGM DESIGN MANUAL THIRD EDITION 8. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM): ALL ASTM REFERENCES NOTED 9. KANSAS CITY MUNICIPAL CODE – LATEST EDITION</p> </div> <div style="width: 25%;"> <p>GENERAL CONSTRUCTION</p> <p>1. STRUCTURAL DRAWINGS SHOULD NOT BE SCALED. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS, AND LARGE SCALE OVER SMALL. 2. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR LOCATION AND SIZE OF OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, CURBS, DIMENSIONS, ETC. NOT INDICATED ON THE STRUCTURAL DRAWINGS. THE LOCATION AND SIZE OF MECHANICAL AND ELECTRICAL OPENINGS IN SLABS, WALLS AND DECKS SHALL BE COORDINATED BY THE CONTRACTOR. PROVIDE ALL ADDITIONAL FRAMING OR REINFORCING TO ACCOMMODATE OPENINGS AS REQUIRED BY THE APPLICABLE STANDARD DETAILS BASED ON THE STRUCTURAL DRAWINGS PROVIDED BY THE STRUCTURAL ENGINEER. NOTES, PLATE NOTES, ETC. ARE NOT OVERWRITTEN BY THE CONTRACTOR UNLESS DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER. 3. WHERE DIMENSIONS ARE PROVIDED FOR OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, CURBS, ETC., BUT MAY BE AFFECTED BY THE EQUIPMENT PURCHASED, THE CONTRACTOR SHALL VERIFY THE INFORMATION PROVIDED PRIOR TO CONSTRUCTION. 4. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS, CHECK AND VERIFY EXISTING DIMENSIONS, AND TAKE ADDITIONAL MEASUREMENTS AS NEEDED. NOTIFY ARCHITECT OF ANY DISCREPANCY BETWEEN ACTUAL CONDITIONS AND INDICATED CONDITIONS. MODIFICATION OF DETAILS OF CONSTRUCTION SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT. 5. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED BY NEW WORK. 6. ALL COLUMNS AND FOUNDATIONS, UNLESS NOTED OTHERWISE, SHALL BE CENTERED ON GRIDLINES IN EACH DIRECTION. 7. TYPICAL DETAILS SHALL APPLY IN GENERAL CONSTRUCTION UNLESS SPECIFICALLY DETAILED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK. 8. PROVIDE CONCRETE EQUIPMENT PADS AND BASES IN ACCORDANCE WITH THE TYPICAL DETAILS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LIMITS AND LOCATIONS. 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF ALL FORM, SHORING AND TEMPORARY BRACING. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKERS DURING CONSTRUCTION. 9.1. DO NOT PLACE CONSTRUCTION MATERIALS OR OTHER CONSTRUCTION LOADS ON THE STRUCTURE SUCH THAT THE LOADS PLACED EXCEED THE CAPACITY OF THE STRUCTURE. 9.2. TAKE INTO CONSIDERATION THAT FULL STRUCTURAL CAPACITY OF MANY STRUCTURAL MEMBERS NOT REALIZED UNTIL STRUCTURAL ASSEMBLY IS COMPLETE; THAT IS, UNTIL SLABS, DECKS, DIAGONAL BRACING, AND SHEAR WALLS ARE INSTALLED. 9.3. PROVIDE TEMPORARY BRACING AND GUYING TO PROVIDE STABILITY AND RESIST ALL LOADS TO WHICH THE PARTIALLY COMPLETED STRUCTURE MAY BE SUBJECTED INCLUDING ERECTION EQUIPMENT AND CONSTRUCTION ADJACENT TO THE STRUCTURE. PURPOSE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 9.4. DO NOT BACKFILL AGAINST BASEMENT WALLS UNTIL FRAMED SLAB AND SLAB ON GRADE LOCATED TOP AND BOTTOM OF BASEMENT WALL HAVE BEEN PLACED AND HAVE REACHED THEIR 28-DAY DESIGN STRENGTH.</p> </div> <div style="width: 25%;"> <p>MASONRY</p> <p>1. ALL CONCRETE MASONRY UNITS SHALL BE MEDIUM WEIGHT HOLLOW BLOCK MADE WITH AGGREGATE. IN ACCORDANCE WITH ASTM C33. 2. ALL LOAD BEARING AND WIND AND LATERAL FORCE RESISTING WALLS (SHEAR WALLS), SHALL BE REINFORCED AS FOLLOWS, UNO:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NOMINAL SIZE</th> <th>VERTICAL REINFORCEMENT</th> <th>HORIZONTAL REINFORCEMENT</th> </tr> </thead> <tbody> <tr> <td>8 INCH</td> <td>#5 @ 24" OC CENTERED</td> <td>#5 @ 24" OC CENTERED</td> </tr> <tr> <td>10 INCH</td> <td>#5 @ 16" OC CENTERED</td> <td>#5 @ 24" OC CENTERED</td> </tr> <tr> <td>12 INCH</td> <td>#4 @ 16" OC EACH FACE</td> <td>#4 @ 24" OC EACH FACE</td> </tr> </tbody> </table> <p>3. ALL PARTITION WALLS (NOT PART OF THE FORCE RESISTING SYSTEM), SHALL BE REINFORCED AS FOLLOWS:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NOMINAL SIZE</th> <th>VERTICAL REINFORCEMENT</th> <th>HORIZONTAL REINFORCEMENT</th> </tr> </thead> <tbody> <tr> <td>8 INCH</td> <td>#5 @ 32" OC CENTERED</td> <td>#5 @ 48" OC CENTERED</td> </tr> <tr> <td>10 INCH</td> <td>#5 @ 32" OC CENTERED</td> <td>#5 @ 48" OC CENTERED</td> </tr> <tr> <td>12 INCH</td> <td>#4 @ 24" OC EACH FACE</td> <td>#4 @ 48" OC EACH FACE</td> </tr> </tbody> </table> <p>4. CONDUITS, PIPES, AND SLEEVES MAY PENETRATE WALL HORIZONTALLY SUCH THAT: 4.1. TYPICAL VERTICAL REINFORCEMENT IS MAINTAINED AT THAT SPECIFIED SPACING ABOVE. 4.2. NO JAMB OR SPECIALLY DETAILED REINFORCEMENT IS CUT OR OTHERWISE MODIFIED. 4.3. MINIMUM HORIZONTAL SPACING OF PENETRATIONS ARE 3X THE LARGEST DIMENSION OF ANY SAID ITEM. 5. CONDUITS AND PIPES MAY BE EMBEDDED IN WALLS VERTICALLY SUCH THAT: 5.1. TYPICAL VERTICAL REINFORCEMENT IS MAINTAINED AT THAT SPECIFIED SPACING ABOVE AND DOES NOT OCCUPY THE SAME CELL AS THE REINFORCEMENT. 5.2. NO JAMB OR SPECIALLY DETAILED REINFORCEMENT IS CUT OR OTHERWISE MODIFIED. 5.3. SIZE OF EMBEDDED ITEMS DO NOT EXCEED 1-1/2" OR 2-1" OR 4-3/4" OUTSIDE DIAMETER ITEM IN EACH DIRECTION. 5.4. VERTICAL RUNS SHALL NOT TRAVERSE HORIZONTALLY ALONG LENGTH OF WALL MORE THAN ONE CELL. 5.5. CERTAIN TYPES OF PIPES SHALL NOT BE ALLOWED AS SPECIFIED BY ACI 530-11, SECTION 1.19.2.5. 6. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND ARCHITECTURAL DRAWINGS FOR LOCATIONS OF CONDUIT, PIPING, DUCTWORK, AND OPENINGS IN MASONRY WALLS. PROVIDE ADDITIONAL REINFORCEMENT AT OPENINGS OR SLEEVES AS INDICATED. 7. PROVIDE VERTICAL REINFORCEMENT AS INDICATED. IN ADDITION, PROVIDE VERTICAL BARS ACROSS ALL OPENINGS, AT CORNERS, ANCHORED INTERSECTIONS AND AT END OF WALL PANELS. 8. CONTINUOUS BOND BEAMS SHALL BE PLACED IN ONE OF THE TOP THREE COURSES OF ALL WALLS. BOND BEAMS (CONT CHORDS) SHALL BE REINFORCED AS FOLLOWS:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NOMINAL SIZE</th> <th>BOND BEAM REINFORCEMENT</th> </tr> </thead> <tbody> <tr> <td>8 INCH</td> <td>2-#5</td> </tr> </tbody> </table> </div> <div style="width: 25%;"> <p>METAL DECKING</p> <p>1. CUTTING AND FRAMING OF OPENINGS FOR OTHER TRADES SHALL BE THE RESPONSIBILITY OF THE TRADES INVOLVED. HOLES THAT ARE LOCATED AND DIMENSIONED ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE DECK ERECTOR. 2. ALL DECK SHALL HAVE THE TYPES AS INDICATED ON THE DRAWINGS AND HAVE THE MINIMUM PROPERTIES:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>THK (in)</th> <th>GA NO</th> <th>DEPTH (in)</th> <th>S (in³)</th> <th>I (in⁴)</th> </tr> </thead> <tbody> <tr> <td>54</td> <td>16</td> <td>1 1/2</td> <td>0.411</td> <td>0.377</td> </tr> <tr> <td>43</td> <td>18</td> <td>1 1/2</td> <td>0.322</td> <td>0.302</td> </tr> <tr> <td>33</td> <td>20</td> <td>1 1/2</td> <td>0.235</td> <td>0.216</td> </tr> <tr> <td>33</td> <td>20</td> <td>2</td> <td>0.36</td> <td>0.423</td> </tr> <tr> <td>33</td> <td>20</td> <td>3</td> <td>0.534</td> <td>0.896</td> </tr> </tbody> </table> <p>3. DECKS SHALL HAVE MINIMUM 2" BEARING AT SUPPORTS. 4. AN APPROVED INSPECTOR SHALL CONTINUOUSLY INSPECT WELDING OF ROOF DECKING. 5. ROOF DECK WITH INSULATING CONCRETE SHALL BE VENTED.</p> </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>HEADED STUDS AND DEFORMED BAR ANCHORS</p> <p>1. HEADED STUDS AND DEFORMED BAR ANCHORS SHALL BE ELECTRIC-ARC STUD WELDED PER MANUFACTURER'S RECOMMENDATIONS AND THE AWS CODE. FILLET WELDING SHALL NOT BE ALLOWED WITHOUT APPROVAL OF THE SEOR. WELDMENT SHALL BE IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHOULD NOT BE POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. THE STUD WILL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8" DIAMETER AND SMALLER, AND 3/16" FOR 5/8" DIAMETER AND LARGER STUDS. 2. HEADED STUDS SHALL BE TYPE B PER THE AWS CODE WITH A MINIMUM YIELD STRENGTH OF 51 ksi. 3. HEADED STUDS SHALL BE NELSON GRANULAR FLUX FILLED. 4. ANY SUBSTITUTIONS OF THE ANCHORS ABOVE MUST BE APPROVED BY THE SEOR. 5. STUDS SHALL BE MANUFACTURED OF COLD DRAWN BAR STOCK CONFORMING TO ASTM A-108. 6. DEFORMED BAR ANCHORS SHALL COMPLY WITH ASTM A-108 AND A-496 WITH A MINIMUM YIELD STRENGTH OF 70 ksi. 7. UNLESS NOTED OTHERWISE, DEFORMED BAR ANCHOR LENGTHS SHALL BE AS FOLLOWS:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DIA (in)</th> <th>EMBEDMENT (in)</th> </tr> </thead> <tbody> <tr> <td>3/8</td> <td>24</td> </tr> <tr> <td>1/2</td> <td>24</td> </tr> <tr> <td>5/8</td> <td>30</td> </tr> </tbody> </table> </div> <div style="width: 30%;"> <p>POST-INSTALLED MECHANICAL ANCHORS</p> <p>1. EXPANSION TYPE ANCHORS SHALL BE SIMPSON STRONG-BOLT 2 (ICC ESR-3037 FOR CONCRETE; IAPMO ER-0240 FOR CMU) AS NOTED ON DRAWINGS. 2. UNDERCUT TYPE ANCHORS SHALL BE SIMPSON TORQ-CUT (ICC ESR-2705) AS NOTED ON DRAWINGS. 3. ANY SUBSTITUTIONS OF THE ANCHORS ABOVE MUST BE APPROVED BY THE SEOR. 4. ANCHORS SHALL BE ZINC PLATED UNLESS NOTED OTHERWISE AS STAINLESS STEEL. 5. WHEN EXPANSION TYPE ANCHORS ARE USED, THE NUT SIZE, PROVIDE ANCHORS OF 1/2" NOMINAL SIZE. 6. ANCHORS SHALL MEET THE MINIMUM EMBEDMENT, EDGE DISTANCES, SPACING, AND SLAB/WALL THICKNESS CRITERIA AS REQUIRED BY THE APPLICABLE REPORT. 7. EXPANSION ANCHORS SHALL NOT BE USED AS HOLD-DOWN ANCHORS. 8. EXPANSION ANCHORS SHALL NOT BE USED FOR NON-VIBRATION ISOLATED EQUIPMENT RATED OVER 1000 ANCHORS INSTALLED IN OVERHEAD CONDITIONS FOR NON-VIBRATION ISOLATED EQUIPMENT WITH RECIPROCATING OR ROTATING MECHANISMS SHALL BE UNDERCUT ANCHORS. 9. WHEN EXPANSION TYPE ANCHORS ARE INSTALLED THROUGH THE LOW FLUTES OF METAL DECK INTO CONCRETE, THEY SHALL BE PLACED AS CLOSE TO THE CENTERLINE OF THE FLUTES AS PRACTICABLE. THE DECK SHALL BE A MINIMUM THICKNESS OF 33/32" AND THE FLUTE WIDTH SHALL CONFORM WITH THE APPLICABLE ES REPORT, BUT NOT LESS THAN THE FLUTE WIDTH. 10. WHEN INSTALLING DRILLED-IN ANCHORS, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS BY LOCATING SAID REINFORCING BY NON-DESTRUCTIVE MEANS. 11. HOLES SHALL BE DRILLED, CLEANED AND PREPARED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION AND THE APPLICABLE ES REPORT. HOLES SHALL BE FREE OF DEBRIS BY IN-HOLE BRUSHING COMBINED WITH VACUUM OR OIL-FREE COMPRESSED AIR; JETTING HOLES WITH WATER IS NOT PERMITTED. 12. FOLLOWING ATTAINMENT OF 10% OF THE SPECIFIED INSTALLATION TORQUE, 100% OF THE SPECIFIED TORQUE SHALL BE REACHED WITHIN SEVEN (7) OR FEWER COMPLETE TURNS OF THE NUT. IF THE SPECIFIED TORQUE IS NOT ACHIEVED WITHIN THE REQUIRED NUMBER OF TURNS, THE ANCHOR SHALL BE REMOVED OR ABANDONED.</p> </div> </div>										NOMINAL SIZE	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	8 INCH	#5 @ 24" OC CENTERED	#5 @ 24" OC CENTERED	10 INCH	#5 @ 16" OC CENTERED	#5 @ 24" OC CENTERED	12 INCH	#4 @ 16" OC EACH FACE	#4 @ 24" OC EACH FACE	NOMINAL SIZE	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	8 INCH	#5 @ 32" OC CENTERED	#5 @ 48" OC CENTERED	10 INCH	#5 @ 32" OC CENTERED	#5 @ 48" OC CENTERED	12 INCH	#4 @ 24" OC EACH FACE	#4 @ 48" OC EACH FACE	NOMINAL SIZE	BOND BEAM REINFORCEMENT	8 INCH	2-#5	THK (in)	GA NO	DEPTH (in)	S (in ³)	I (in ⁴)	54	16	1 1/2	0.411	0.377	43	18	1 1/2	0.322	0.302	33	20	1 1/2	0.235	0.216	33	20	2	0.36	0.423	33	20	3	0.534	0.896	DIA (in)	EMBEDMENT (in)	3/8	24	1/2	24	5/8	30
NOMINAL SIZE	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT																																																																									
8 INCH	#5 @ 24" OC CENTERED	#5 @ 24" OC CENTERED																																																																									
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3/8	24																																																																										
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5/8	30																																																																										

EARTHWORK AND FOUNDATIONS

1. ALL EARTHWORK AND SITE PREPARATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE GEOTECHNICAL REPORT. ALL FOUNDATION EXCAVATIONS SHALL BE OBSERVED AND APPROVED BY THE GEOTECH.
2. ANY EXISTING FILLS OR UNSUITABLE SOILS AS DETERMINED BY THE GEOTECH SHALL BE EXCAVATED AND REPLACED WITH PROPERLY COMPACTED FILL.
3. EXTREME CARE SHALL BE EXERCISED WHEN EXCAVATING OR GRADING ADJACENT TO EXISTING STRUCTURES OR IMPROVEMENTS SO AS NOT TO DAMAGE OR UNDERMINE FOUNDATIONS, WALLS, SLABS, ETC.
4. DO NOT EXCAVATE BELOW THE BEARING ELEVATION OF ANY COMPLETED FOOTING NOR ANY CLOSER TO THE FOOTING THAN A SLOPE OF TWO HORIZONTAL (MEASURED FROM EDGE OF FOOTING TO NEAREST POINT IN EXCAVATION) TO ONE VERTICAL.
5. HORIZONTAL CONSTRUCTION JOINTS IN COLUMN FOOTINGS, PILE CAPS, SLABS ON GRADE AND MAT FOUNDATIONS ARE NOT PERMITTED.
6. PROVIDE DOWELS FOR ALL WALLS EMBEDDED INTO COLUMN FOOTINGS, MAT FOUNDATIONS, AND GRADE BEAMS. DOWELS SHALL BE THE SAME SIZE AND SPACING AS VERTICAL WALL REINFORCEMENT.

CONCRETE

1. LOCATION OF CONSTRUCTION JOINTS OR POUR JOINTS SHALL BE AS INDICATED ON APPROVED SHOP DRAWINGS.
2. ALL CONCRETE SHALL BE VIBRATED DURING PLACEMENT.
3. PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
4. NO STAKES, NEITHER STEEL NOR WOOD, SHALL BE PERMITTED IN ANY CONCRETE POUR. SUSPEND FORMS FROM ABOVE GRADE.
5. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, INSERTS, ETC., SHALL BE SECURELY TIED IN PLACE PRIOR TO POUR. CONCRETE CONCRETE BLOCKS ONLY SHALL BE USED TO SUPPORT REINFORCING OFF GRADE.
6. ALL REINFORCEMENT SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315.7.
7. PROVIDE DOWELS OF SAME SIZE AND NUMBER FROM ADJACENT POUR, BOTH VERTICALLY AND HORIZONTALLY, TO MATCH TYPICAL REINFORCING SHOWN. LAPS SHALL BE IN ACCORDANCE WITH THE DEVELOPMENT LENGTH AND LAP SPLICE SCHEDULE. DOWELS SHALL BE CLEANED AFTER POUR.
8. FIELD WELDING OR BENDING OF REINFORCING IS NOT PERMITTED EXCEPT AS INDICATED ON THE DRAWINGS OR AS APPROVED BY THE STRUCTURAL ENGINEER. USE LOW HYDROGEN ELECTRODES GRADE 70 OR HIGHER.
9. CONCRETE REINFORCEMENT IN WALLS AND FOOTINGS MAY BE SPLICED AS REQUIRED, PROVIDED THAT BARS ARE OF THE LONGEST PRACTICAL LENGTH AND ALL SPLICES ARE SHOWN ON THE REINFORCING BAR SHOP DRAWINGS. SPLICES ARE TO BE STAGGERED WHEN POSSIBLE. PROVIDE LAP SPLICES AND DEVELOPMENT LENGTHS IN ACCORDANCE WITH THE DEVELOPMENT LENGTH AND LAP SPLICE SCHEDULE. USE CLASS B LAP SPLICES UNLESS NOTED OTHERWISE.
10. MINIMUM CAST-IN-PLACE (NONPRESTRESSED) CONCRETE COVER SHALL BE AS FOLLOWS:

STRUCTURAL STEEL

1. STEEL FRAMING DESIGNATIONS AND SYMBOLS ARE DEFINED IN THE STRUCTURAL STEEL SYMBOL LEGEND.
2. ALL FIELD BOLTED SHEAR CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER A325F185 BOLTS.
3. UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE FULLY PRETENSIONED AND INSPECTED USING TENSION CONTROL TWIST-OFF STYLE BOLTS. UNLESS SPECIFICALLY INDICATED AS SLIP CRITICAL OR PRETENSIONED, ALL JOINTS SHALL BE DESIGNATED AS SNUG TIGHT. ROUTINE OBSERVATION TO VERIFY THE SPLINED ENDS ARE PROPERLY SEVERED DURING INSTALLATION IS REQUIRED FOR ALL BOLTS.
3. USE NON-SHRINK GROUT UNDER ALL COLUMN BASE PLATES BEFORE PLACING ANY ELEVATED SLAB.
4. WHERE THE WORK OF OTHER TRADES REQUIRES CUTS OR OPENINGS TO BE MADE IN STRUCTURAL STEEL MEMBERS, APPROVAL SHALL BE OBTAINED FROM THE ENGINEER. SUCH OPENINGS SHALL BE MADE IN THE SHOP AND CLEARLY INDICATED ON THE SHOP DRAWING.
5. ALL WELDERS MUST BE QUALIFIED IN THE PROCESS USED AND AWS CERTIFIED. WELDERS MUST PERFORM A SAMPLE WELD IN THE FIELD UNDER THE SUPERVISION OF THE SPECIAL INSPECTOR USING THE APPROVED WELDING PROCEDURE SPECIFICATION (WPS). ALL SPECIMENS SHALL BE TESTED BY A QUALIFIED LAB. MATERIAL TESTS SHALL BE SUPPLIED AND PAID FOR BY THE CONTRACTOR.
6. LENGTHS CALLED FOR ON THE PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET SYMBOLS CALLED FOR ON THE PLANS ARE GIVEN WITH-OUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED BY AISC OR 3/16", WHICHEVER IS GREATER.
7. ALL GROOVE WELDS INDICATED ON PLANS AND SECTIONS SHALL BE COMPLETE JOINT PENETRATION WELDS (CJP) UNLESS SPECIFICALLY INDICATED TO BE PARTIAL JOINT PENETRATION WELDS (PJP).
8. ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALVANIZED UNLESS NOTED OTHERWISE. SEE PLANS FOR INTERIOR LOCATIONS WHERE HOT-DIPPED GALVANIZED STEEL IS REQUIRED.

FOUNDATIONS

1. THE FOUNDATION DESIGN WILL BE PER PENDING GEOTECHNICAL REPORT
2. SYSTEM CAPACITIES SHALL BE AS FOLLOWS (ASSUMED):
PIERS: BEARING CAPACITY 50 ksf
SKIN FRICTION 10 ksf
MINIMUM PIER DIAMETER 2'-0"
3. MIN EMBEDMENT INTO BEDROCK SHALL BE ONE PIER DIAMETER

MATERIALS OF CONSTRUCTION

1. NORMALWEIGHT CONCRETE:
28-DAY COMPRESSIVE STRENGTH f_c = 4,000 psi

REINFORCING STEEL:
ASTM A615 GR 60 f_y = 60 ksi

REINFORCING WELDED STEEL:
ASTM A706 GR 60 f_y = 60 ksi

WELDED WIRE FABRIC:
ASTM A815 f_y = 65 ksi

STRUCTURAL STEEL

5.1. WELDED T-ANGLE AND TEE SHAPES:
ASTM A36
5.2. ANGLES, CHANNELS, AND PLATES:
ASTM A36
5.3. HSS RECTANGULAR & ROUND:
ASTM A500 GR B
5.4. PIPE:
ASTM A53
6. BOLTS:
ASTM A325
7. TWIST-OFF TENSION-CONTROLLED BOLTS:
ASTM F1852

ANCHOR RODS:
ASTM F1554 f_y = 36 ksi (OR 105 ksi AS NOTED)

NUTS:
ASTM A563 f_y = 36 ksi (OR 105 ksi AS NOTED)

WELDING ELECTRODES:
E70XX

STRUCTURAL ROOF DECK:
GALVANIZED, STRUCTURAL QUALITY ASTM A653 GR. 60, Z180 ZINC COATING

METAL FORM DECK:
GALVANIZED, STRUCTURAL QUALITY ASTM A653 GR. 60, Z180 ZINC COATING

COLD-FORMED STEEL:
ASTM A570, A611, OR A653

MASONRY

14.1. CONCRETE MASONRY UNITS:
ASTM C62.1
14.2. GROUT:
ASTM C476
14.3. MORTAR:
ASTM C270

f_m = 1.5 ksi

f_c = 2.0 ksi

f_c = 1.8 ksi

GENERAL TYPE AND PLACEMENT

REINF SIZE	MIN COVER (in)
ALL	3

REINFORCING

REINF SIZE	MIN COVER (in)
#6 THROUGH #18	2
#5 AND SMALLER	1 1/2

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH

REINF SIZE	MIN COVER (in)
ALL	3

EXPOSED TO EARTH OR WEATHER

REINF SIZE	MIN COVER (in)
TYPICAL	ALL

TISSUE

REINF SIZE	MIN COVER (in)
#6 THROUGH #18	2
#8 AND SMALLER	1

NOT EXPOSED TO WEATHER OR EARTH

REINF SIZE	MIN COVER (in)
SLABS, WALLS, AND JOISTS	1 1/2
#14 THROUGH #18	3/4
#11 AND SMALLER	1/2

BEAMS AND COLUMNS

REINF SIZE	MIN COVER (in)
(PRIMARY REINF, TIES, STIRRUPS, & SPIRALS)	ALL
	1 1/2

SHells AND FOLDED PLATE MEMBERS

REINF SIZE	MIN COVER (in)
#6 THROUGH #18	3/4
#5 AND SMALLER	1/2

NOT FOR CON

POST-INSTALLED MECHANICAL ANCHORS (CONTINUED)

13. MECHANICAL ANCHORS SHALL BE TESTED IN THE PRESENCE OF THE SPECIAL INSPECTOR.

13.1 THE MINIMUM FREQUENCY OF TESTING IS AS FOLLOWS:

1. FOR SILL BOLTING APPLICATIONS, 10% OF ANCHORS SHALL BE TESTED.
2. FOR NONSTRUCTURAL APPLICATIONS SUCH AS EQUIPMENT ANCHORAGE, 50% OR ALTERNATE BOLTS IN A GROUP, INCLUDING AT LEAST ONE-HALF THE ANCHORS IN EACH GROUP.
3. FOR NONSTRUCTURAL APPLICATIONS WITH FACTORED DESIGN TENSION LESS THAN 100 LBS AND CLEARLY NOTED ON THE CONSTRUCTION DOCUMENTS, 10% OF THE ANCHORS MAY BE TESTED.
4. FOR NONSTRUCTURAL APPLICATION, ALL ANCHORS SHALL BE TESTED.

13.2 TESTING SHALL OCCUR AT LEAST 24 HOURS AFTER INSTALLATION.

13.3 ANCHORS SHALL BE TESTED WITH HYDRAULIC RAM TENSION TEST OR CALIBRATED WRENCH TORQUE TEST.

13.4 TEST EQUIPMENT, INCLUDING TORQUE WRENCHES, SHALL BE CALIBRATED BY AN APPROVED TESTING AGENCY IN ACCORDANCE WITH RECOGNIZED PROCEDURES.

13.5 APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT POSSIBLE, REMOVE NUT AND INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS AS THE ORIGINAL NUT USING A TORQUE WRENCH.

13.6 REACTION LOAD FROM TEST FIXTURE MAY BE CLOSE TO THE ANCHOR BEING TESTED (CONTINUED TEST) PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURE.

13.7 ANCHORS TESTED WITH CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE SHOWN IN THE TABLE BELOW WITHIN $\frac{1}{2}$ TURN OF THE NUT.

STRONG-BOLT 2 (IN CONCRETE)

DIAMETER	TORQUE
(in)	(ft-lbs)
1/4	4
3/8	30
1/2	60
5/8	90
3/4	150
1	230

STRONG-BOLT 2 (IN MASONRY)

DIAMETER	TORQUE
(in)	(ft-lbs)
3/8	20
1/2	35
5/8	55
3/4	100

TORQ-CUT

DIAMETER	TORQUE
(in)	(ft-lbs)
1/2	90
5/8	185
3/4	240

14. WHERE AN ANCHOR DOES NOT SET PROPERLY OR FAILS TESTING, THE DRILLED HOLE SHALL NOT BE REUSED. ABDONED HOLES SHALL BE FILLED WITH NON SHRINK GROUT. THE MINIMUM SPACING BETWEEN A GROUT FILLED HOLE AND A POST-INSTALLED ANCHOR IS 1.5 TIMES THE ANCHOR DIAMETER UNLESS APPROVED BY THE SEOR.

POWER-DRIVEN FASTENERS

1. ALL POWER-DRIVEN FASTENERS SHALL BE SIMPSON PDP OR PDPA TYPE (ICC ESR-2138).

2. ANY SUBSTITUTION OF THE FASTENER ABOVE MUST BE APPROVED BY THE SEOR.

3. FASTENERS SHALL NOT BE INSTALLED UNTIL THE CONCRETE HAS REACHED ITS DESIGN STRENGTH.

4. FASTENERS SHALL NOT BE INSTALLED IN CONCRETE WHERE THE THICKNESS IS LESS THAN THREE TIMES THE EMBEDMENT.

5. THE MINIMUM ALLOWABLE SPACING OF FASTENERS SHALL BE 4 INCHES EXCEPT THAT FASTENERS ON THE UNDERSIDE OF FILLED DECK, RUNNING PARALLEL TO FLUTES, THE SPACING SHALL BE 6 INCHES.

6. THE MINIMUM ALLOWABLE EDGE DISTANCE SHALL BE 3 INCHES AND INCREASED BY 20% WHERE OCCURS AT CURBS AND BOTTOM FLUTES OF FILLED DECK.

7. ALLOWABLE SHEAR AND TENSILE VALUES FOR FASTENERS SHALL BE THE LESSER OF THOSE GIVEN BY THE ES REPORT OR 100 LBS.

8. PROPER FASTENER LOCATION ON UNDERSIDE OF FILLED DECK SHALL COMPLY WITH THE ES REPORT.

9. WHEN INSTALLING POWER-DRIVEN FASTENERS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE-TENSIONED OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NONDESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A CLEARANCE OF A MINIMUM OF 1 INCH BETWEEN THE REINFORCEMENT AND THE FASTENER.

10. POWER-DRIVEN FASTENERS MAY BE USED FOR ANCHORAGE OF WIRES, INTERIOR PARTITION WALLS, JUNCTION BOXES, SMALL A/C DUCTS, CONDUIT LESS THAN OR EQUAL TO 2 1/2 INCHES IN DIAMETER, AND WATER LINES LESS THAN OR EQUAL TO 1/2 INCHES IN DIAMETER.

11. TENSION TEST FASTENERS TO TWICE THE ALLOWABLE TENSION LOAD OF THE ES REPORT.

12. FIELD TESTING FREQUENCY OF LOW-VELOCITY FASTENERS SHALL BE ONE IN TEN (1 IN 10) FOR ALL APPLICATIONS EXCEPT SMALL A/C DUCTS AND JUNCTION BOXES LESS THAN 20 LBS. REQUIRE NO TESTING.

STAIR DESIGN

1. CONTRACTOR SHALL PROVIDE COMPLETE DRAWINGS AND CALCULATIONS FOR ALL STAIRWAYS. STAIRS, STAIR LANDINGS, STAIR MEMBERS, AND SUPPORTS NOT SHOWN SHALL BE STRUCTURALLY DESIGNED, DETAILED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MISSOURI.

2. ALL REQUIRED EMBEDDED ANGLES AND PLATES SHALL BE PART OF THE STAIR DESIGN AND DETAILING.

3. STAIRWAYS SHALL BE DESIGNED FOR DEAD LOAD, LIVE LOAD OF 100 psf AND ALL RELEVANT LATERAL LOADS.

4. REFER TO THE ARCHITECTURAL DRAWINGS FOR STAIRWAY DIMENSIONS, DETAILS AND OTHER REQUIREMENTS.

5. STAIRS MAY BE SUPPORTED BY THE PRIMARY STRUCTURE PROVIDED STAIR FRAMING DOES NOT IMPOSE ECCENTRIC OR TORSIONAL LOADING UPON THE PRIMARY FRAMING.

STRUT SYSTEM

1. ALL STRUT SYSTEM COMPONENTS SHALL BE UNISTRUT, MASON, OR POWER-STRUT.

2. CHANNEL MEMBERS SHALL BE FABRICATED FROM STRUCTURAL GRADE STEEL PER ASTM A1011 SS GR 33 OR ASTM A653 GR 33.

3. FITTINGS SHALL BE FABRICATED FROM STEEL PER ASTM A575, ASTM A576, ASTM A36, OR ASTM A635.

4. CHANNEL BRASSIS SHALL BE PURMA-GREEN AND FASTENERS SHALL BE ELECTRO-GALVANIZED.

5. CHANNEL FITTINGS AND HARDWARE CONNECTIONS SHALL BE 5/8"-11 MACHINE BOLTS WITH P1012/P10125 NUTS/SPRING NUTS UNLESS NOTED OTHERWISE ON DRAWINGS.

6. TORQUE REQUIREMENTS ARE AS FOLLOWS:

BOLT SIZE (in.)	TORQUE (ft-lbs.)
1/4	6
3/8	19
1/2	50
5/8	100
3/4	125

7. WHERE STRUT SYSTEM IS USED TO SUPPORT EQUIPMENT, CONTRACTOR SHALL VERIFY ALL PLACEMENT AND ANCHORAGE ASPECTS WITH MANUFACTURER AND ARCHITECTURAL LAYOUT.

STEEL JOISTS

1. THE DESIGN, FABRICATION, AND ERECTION OF JOISTS SHALL COMPLY WITH THE STEEL JOIST INSTITUTE STANDARD SPECIFICATION.

2. THE JOIST MANUFACTURER SHALL PROVIDE SIGNED AND SEALED CALCULATIONS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN MISSOURI FOR ALL JOISTS SUBJECT TO SPANNING LOADS INDICATED IN THE DOCUMENTS.

3. THE JOIST MANUFACTURER SHALL DESIGN ROOF JOISTS AND PROVIDE APPROPRIATE BRIDGING FOR NET UPLIFT SHOWN ON THE LOADING DIAGRAMS.

4. DEFLECTION CRITERIA FOR ALL NON-STANDARD JOISTS AND JOIST GIRDERS SHALL BE SPAN/240 FOR TOTAL LOAD AND SPAN/360 FOR LIVE LOAD.

5. K-SERIES KCS JOISTS AND LH-SERIES OR DLH-SERIES JOISTS SHALL BE AS DEFINED BY THE SJII STANDARD SPECIFICATION, LATEST EDITION.

6. WHERE END SUPPORTS FOR K-SERIES JOISTS ARE NOT SHOWN OR NOTED, THE FOLLOWING MINIMUM BEARING LENGTHS, PARALLEL TO THE LENGTH OF THE JOIST SHALL BE PROVIDED PER THE SJII STANDARD SPECIFICATION:

- 6.1 MIN BEARING ON STEEL = 2 1/2"
- 6.2 MIN BEARING ON CONCRETE OR CMU (WITH BEARING PLATE) = 4"

7. ANY HORIZONTAL BRIDGING SHOWN FOR K-SERIES JOISTS IS SCHEMATIC AND SHALL BE LOCATED IN ACCORDANCE WITH SJII SPECIFICATIONS. BRIDGING MEMBERS SHALL CONSIST OF TWO CONTINUOUS MEMBERS, ONE ATTACHED TO THE BOTTOM CHORD AND ONE ATTACHED TO THE TOP CHORD. ATTACHMENT SHALL BE BY WELDING OR OTHER MECHANICAL MEANS. THE BRIDGING AND ITS CONNECTIONS SHALL BE CAPABLE OF TRANSFERRING A HORIZONTAL FORCE OF NOT LESS THAN 700 LBS.

8. ANGULAR BRIDGING FOR K-SERIES JOISTS IS SCHEMATIC AND SHALL BE LOCATED IN ACCORDANCE WITH SJII SPECIFICATIONS. THE CONNECTION OF BRIDGING BETWEEN A MASONRY WALL AND AN ADJACENT PARALLEL JOIST SHALL BE HORIZONTAL AND THE CONNECTIONS SHALL BE DETAILED TO ALLOW THE JOIST TO DEFLECT SPAN/360 UNDER LIVE LOAD.

9. BOTTOM OF JOIST GIRDERS TO BE BRACED PER SJII SPECIFICATIONS OR AS NOTED ON THE DRAWINGS.

10. PROVIDE BOTTOM CHORD CEILING EXTENSIONS WHERE REQUIRED BY ARCHITECTURAL DETAIL, OR AS NOTED.

11. HANGERS AND OTHER SUPPORTS FOR MECHANICAL, ELECTRICAL, OR PLUMBING SYSTEMS SHALL BE LOCATED AT THE INTERSECTION OF CHORD AND WEB MEMBERS. CONCENTRATED LOADS ON A SINGLE JOIST MUST BE SUBMITTED TO THE ENGINEER OF RECORD AND VERIFIED BY THE JOIST MANUFACTURER FOR REVIEW PRIOR TO INSTALLATION.

12. PROVIDE DIAGONAL BRIDGING AT ALL END SPANS OF JOIST BRIDGING.

EXTERIOR PRECAST WALL PANELS

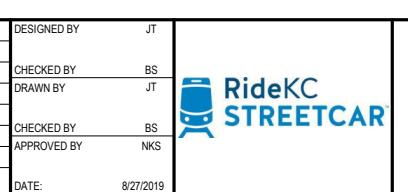
1. ALL THE EXTERIOR PRECAST WALL PANELS, THEIR CONNECTIONS TO THE BUILDING STRUCTURAL STEEL, AND TO THE BUILDING FOUNDATIONS ARE A DEFERRED APPROVAL ITEM.

2. INSTALLATION OF THE EXTERIOR PRECAST WALL PANELS AND CONNECTIONS SHALL NOT BE STARTED UNTIL PLANS, SPECIFICATIONS, AND CALCULATIONS HAVE BEEN REVIEWED AND APPROVED BY THE AOR AND SEOR.

3. ALL EMBEDDED CONNECTIONS AND LOCAL REINFORCEMENT THAT MAY BE REQUIRED AT THE POINTS OF CONNECTION INTO THE BUILDING FOUNDATIONS ARE THE RESPONSIBILITY OF THE PRECAST PANEL DESIGNER. CAST-IN-PLACE CONCRETE SHALL NOT BE POURED UNTIL ALL THESE CONNECTIONS AND REINFORCEMENT ARE COORDINATED AND APPROVED BY THE SEOR.

REV	DATE	DESCRIPTION	DESIGNED BY	JT
	8/27/2019	30% DESIGN SUBMITTAL	CHECKED BY	BS
			DRAWN BY	JT
			CHECKED BY	BS
			APPROVED BY	NKS
			DATE:	8/27/2019

PLOT DATE: 8/23/2019 23:01 PM



PRELIMINARY PLANS - 30% DATE: 08-27-2019

10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856
NOT FOR CONSTRUCTION

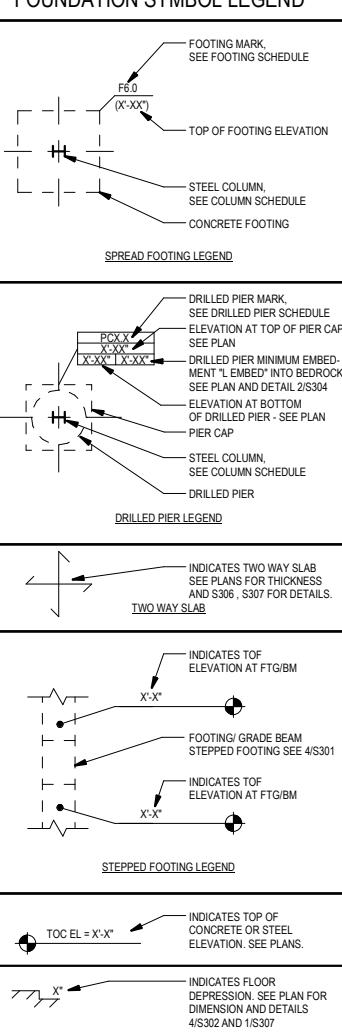
KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
GENERAL NOTES
SHEET 2 OF 2

SCALE FOR 22" x 34":
FILENAME:
CONTRACT NO.: 10147326
VOLUME:
DRAWING NO.: S002 SHEET NO.: 35

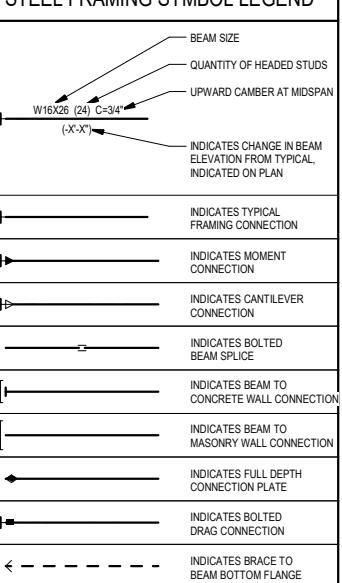
ABBREVIATIONS

@	AT
AB	ANCHOR BOLTS
ADDL	ADDITIONAL
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
ARCH	ARCHITECTURAL
BKT	BRACKET
BL	BASE LINE
BM	BEAM
BN	BOUNDARY NAILING
BOS	BOULDER OF FOOTING
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
CANT	CANTILEVER
CIP	CAST IN PLACE
CJ	CONSTRUCTION OR CONTROL JOINT
CL	CENTER LINE, CLEARANCE, OR CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUED
CP	COMPLETE PENETRATION
CTR	CENTER
C TO C	CENTER TO CENTER
DIA	DIA
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DET	DETAIL
DIA	DIA
DIAG	DIAGONAL
DIM	DIMENSION
D	DEAD LOAD
DO	DITTO
DWG	DRAWING
DWL	DOWEL
E	EARTHQUAKE LOAD
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMB	EMBEDMENT, EMBEDDED
EN	END NAILING
EOS	EDGE OF SLAB
EO	EQUAL
ES	EACH SIDE
EW	EACH WAY
EXP	EXPANSION
EXIST	EXISTING
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FL	FLOOR
FN	FACE NAILING
FP	FLUSH PENETRATION
FS	FAR SIDE
FT	FEET
FTG	FOOTING
FUT	FUTURE
FV	FIELD VERIFY
GA	GAGE OR GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GR	GRADE
HK	HOOK
HORIZ	HORIZONTAL
HS	HEADED STUD
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SECTION
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCHES
INFO	INFORMATION
INT	INTERIOR
JT	JOINT
K	KIPS
KSF	KIPS PER SQUARE FOOT

FOUNDATION SYMBOL LEGEND



STEEL FRAMING SYMBOL LEGEND



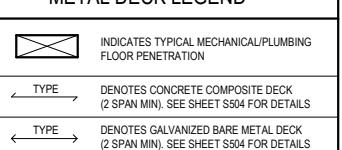
DRILLED PIER SCHEDULE

Type	Length	Width	05 CAP DEPTH	09 CAISSON DIAMETER SHAFT
PC4	4'-0"	4'-0"	3'-0"	3'-0"
PC4A	3'-0"	3'-0"	4'-0"	2'-0"
PC4B	4'-0"	4'-0"	4'-0"	3'-0"
PC6	4'-0"	6'-0"	4'-0"	3'-0"

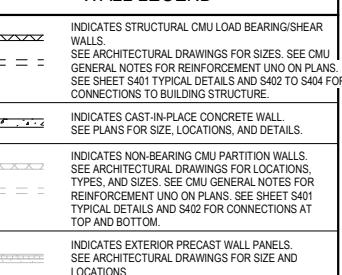
GRADE BEAM SCHEDULE

Type	Width	Depth
GB2	2'-0"	2'-0"
GB3	2'-6"	3'-0"
GBA	4'-6"	3'-0"

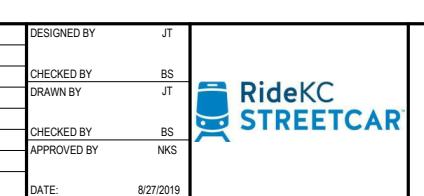
METAL DECK LEGEND



WALL LEGEND



REV	DATE	DESCRIPTION	DESIGNED BY	JT
	8/27/2019	30% DESIGN SUBMITTAL	CHECKED BY	BS
			DRAWN BY	JT
			CHECKED BY	BS
			APPROVED BY	NKS



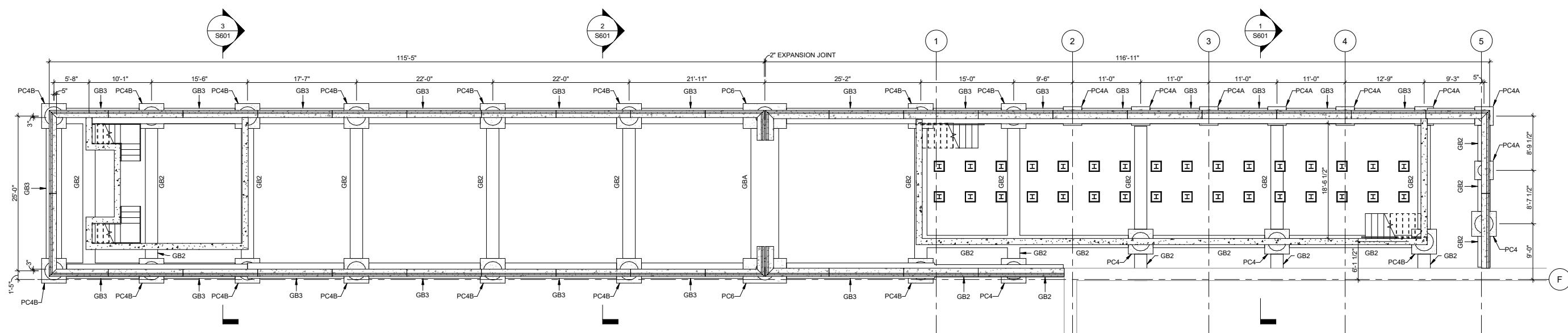
PRELIMINARY PLANS - 30%	DATE: 08-27-2019
	10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856
NOT FOR CONSTRUCTION	

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
LEGEND AND ABBREVIATIONS

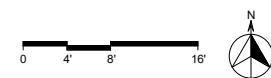
SCALE FOR 22" x 34": 1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: SHEET NO.:
S003 36

STRUCTURAL SHEET NOTES

1. REFER TO SHEET S003 FOR FOUNDATION SCHEDULE
2. STRUCTURAL JOIST 18K = 18 INCH DEPTH
3. STRUCTURAL JOIST 12K = 12 INCH DEPTH
4. STRUCTURAL JOIST 30SLH = 30 INCH DEPTH


1 EXPANSION LLWA FLOOR PLAN

1/8" = 1'-0"



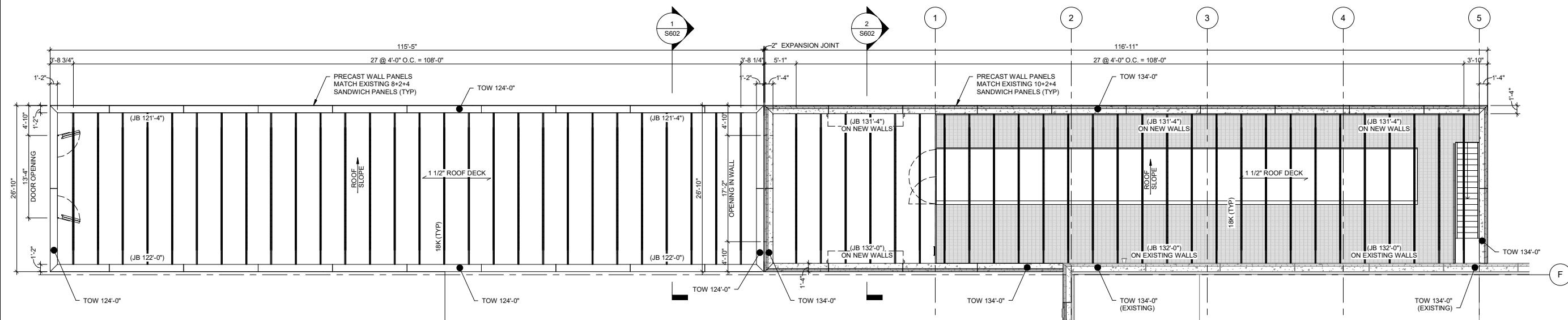
REV	DATE	DESCRIPTION	DESIGNED BY	JT	RideKC STREETCAR	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION VEHICLE MAINTENANCE FACILITY FOUNDATION PLAN	SCALE FOR 22'x34': 1/8" = 1'-0"
8/27/2019		30% DESIGN SUBMITTAL	CHECKED BY	BS					FILENAME:
			DRAWN BY	JT					CONTRACT NO.:
			CHECKED BY	BS					10147326
			APPROVED BY	NKS					VOLUME:
			DATE:	8/27/2019					DRAWING NO.: S101
									SHEET NO.: 37

PLOT DATE: 8/23/2019 23:04 PM

NOT FOR CONSTRUCTION

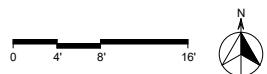
STRUCTURAL SHEET NOTES

1. REFER TO SHEET S003 FOR FOUNDATION SCHEDULE
2. STRUCTURAL JOIST 18K = 18 INCH DEPTH
3. STRUCTURAL JOIST 12K = 12 INCH DEPTH
4. STRUCTURAL JOIST 30SLH = 30 INCH DEPTH



1 EXPANSION LEVEL 2 FLOOR PLAN

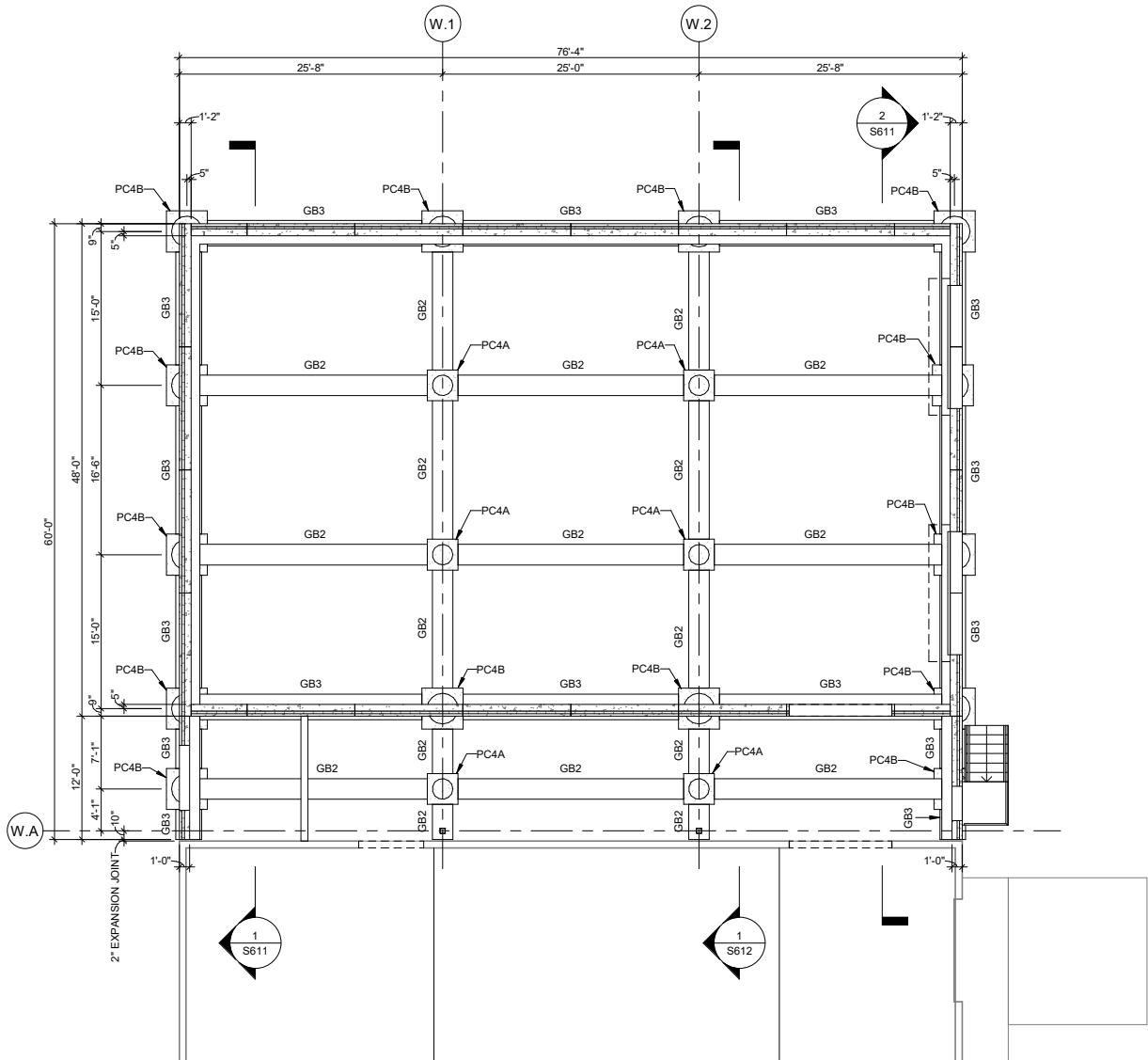
1/8" = 1'-0"



REV	DATE	DESCRIPTION	DESIGNED BY	JT	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22"x34": 1/8" = 1'-0"
	8/27/2019	30% DESIGN SUBMITTAL	CHECKED BY	BS			VEHICLE MAINTENANCE FACILITY	FILENAME:
			DRAWN BY	JT			ROOF FRAMING PLAN	CONTRACT NO.:
			CHECKED BY	BS	RideKC STREETCAR			10147326
			APPROVED BY	NKS				VOLUME:
			DATE:	8/27/2019		NOT FOR CONSTRUCTION		DRAWING NO.: S102
								SHEET NO.: 38

STRUCTURAL SHEET NOTES

REFER TO SHEET S003 FOR FOUNDATION
SCHEDULE
STRUCTURAL JOIST 18K = 18 INCH DEPTH
STRUCTURAL JOIST 12K = 12 INCH DEPTH
STRUCTURAL JOIST 30SLH = 30 INCH DEPTH



1 WAREHOUSE - PRELIMINARY FOUNDATION PLAN
1/8" = 1'-0"



REV	DATE	DESCRIPTION	DESIGNED BY
	8/27/2019	30% DESIGN SUBMITTAL	
			CHECKED BY
			DRAWN BY
			CHECKED BY
			APPROVED BY



PRF1 IMINARY PLANS - 30%

DATE: 08-27-201

**KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
WAREHOUSE EXPANSION FOUNDATION PLAN**

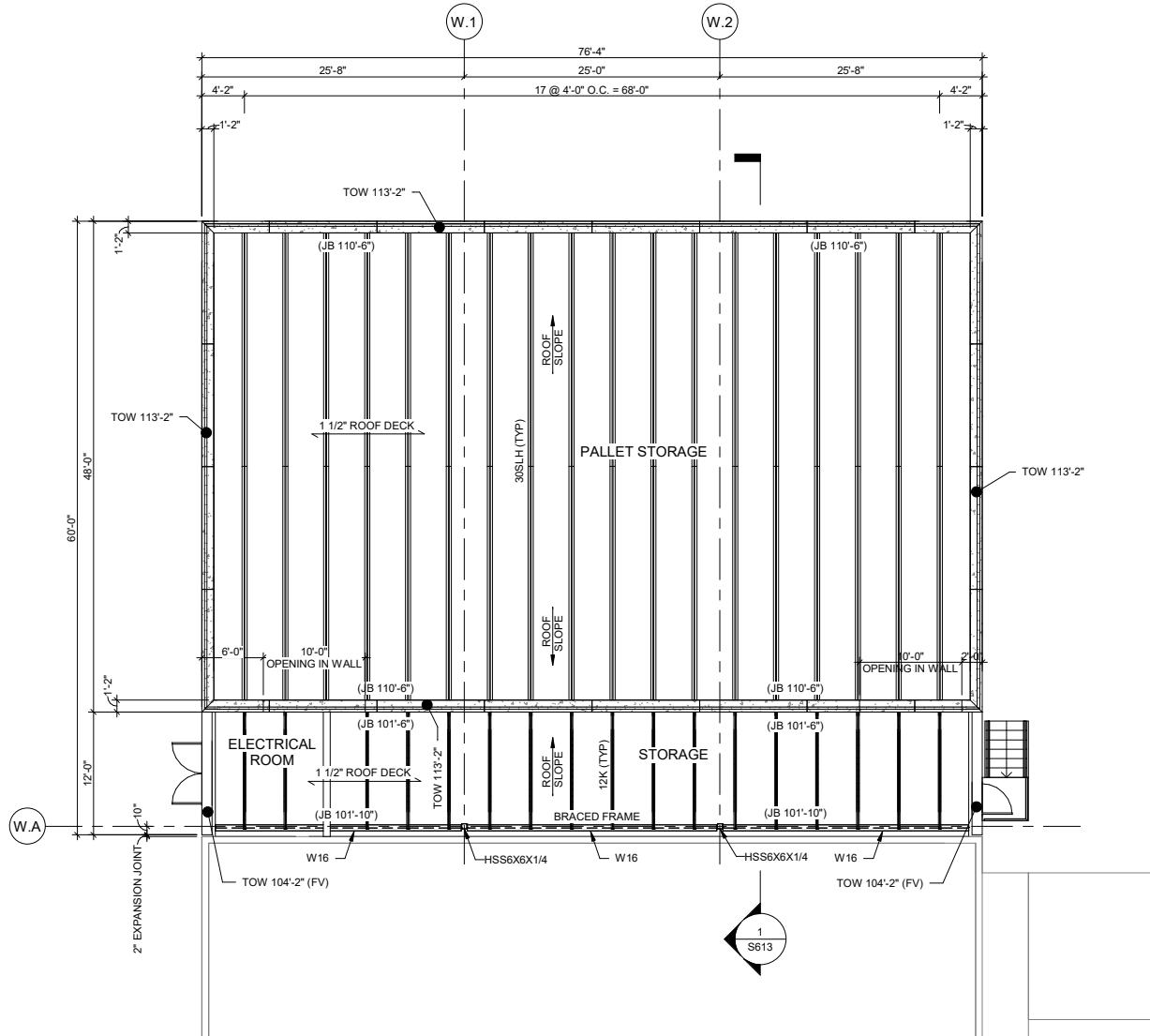
HDR
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700

NOT FOR CONSTRUCTION

SCALE FOR 22" x 34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: **S111** SHEET NO.: **39**

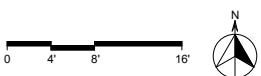
STRUCTURAL SHEET NOTES

1. REFER TO SHEET S003 FOR FOUNDATION SCHEDULE
2. STRUCTURAL JOIST 18K = 18 INCH DEPTH
3. STRUCTURAL JOIST 12K = 12 INCH DEPTH
4. STRUCTURAL JOIST 30SLH = 30 INCH DEPTH



1 WAREHOUSE - ROOF FRAMING EXPANSION

1/8" = 1'-0"



REV	DATE	DESCRIPTION	DESIGNED BY	JT
	8/27/2019	30% DESIGN SUBMITTAL	CHECKED BY	BS
			DRAWN BY	JT
			CHECKED BY	BS
			APPROVED BY	NKS
			DATE:	8/27/2019



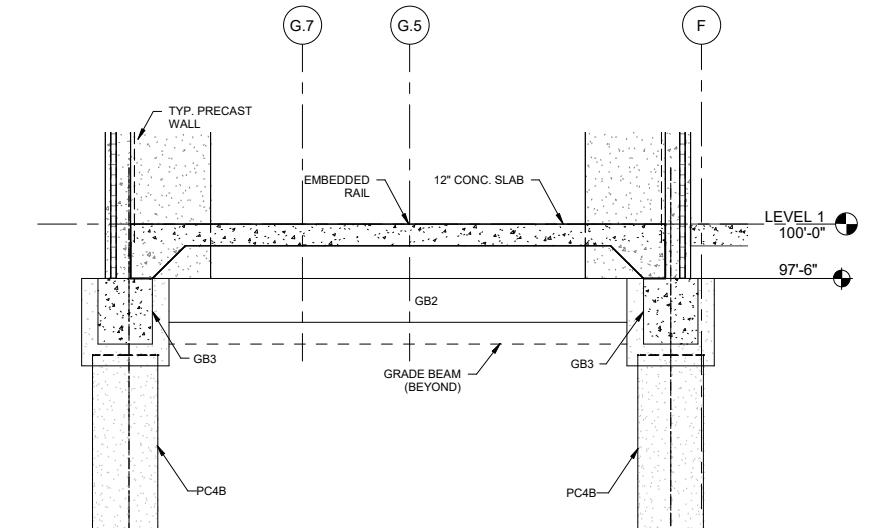
PRELIMINARY PLANS - 30%		DATE: 08-27-2019
	10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	
NOT FOR CONSTRUCTION		

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
WAREHOUSE EXPANSION ROOF FRAMING PLAN

SCALE FOR 22" x 34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	S112
SHEET NO.:	40

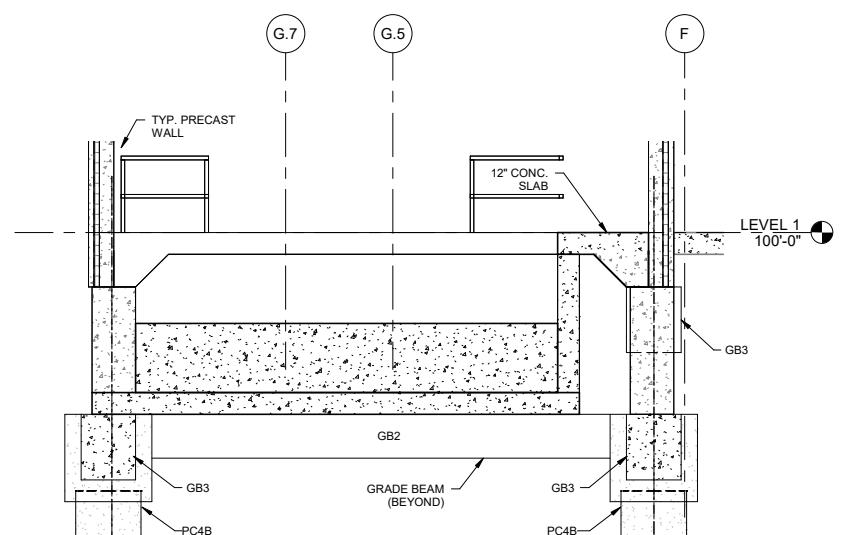
STRUCTURAL SHEET NOTES

1. REFER TO SHEET S003 FOR FOUNDATION SCHEDULE
2. STRUCTURAL JOIST 18K = 18 INCH DEPTH
3. STRUCTURAL JOIST 12K = 12 INCH DEPTH
4. STRUCTURAL JOIST 30SLH = 30 INCH DEPTH



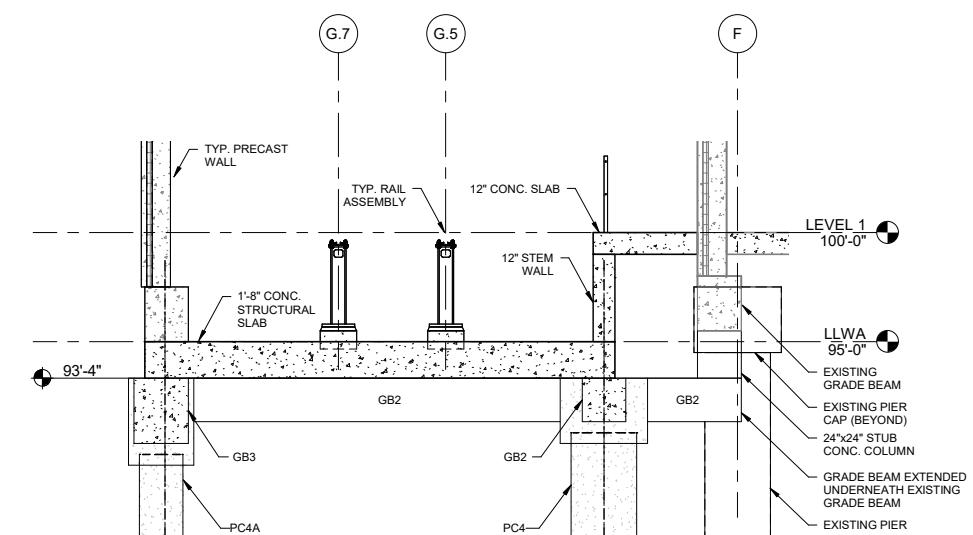
2 TYPICAL VMF FOUNDATION SECTION

1/4" = 1'-0"



3 WHEEL TRUING FOUNDATION SECTION

3 1/4" = 1'

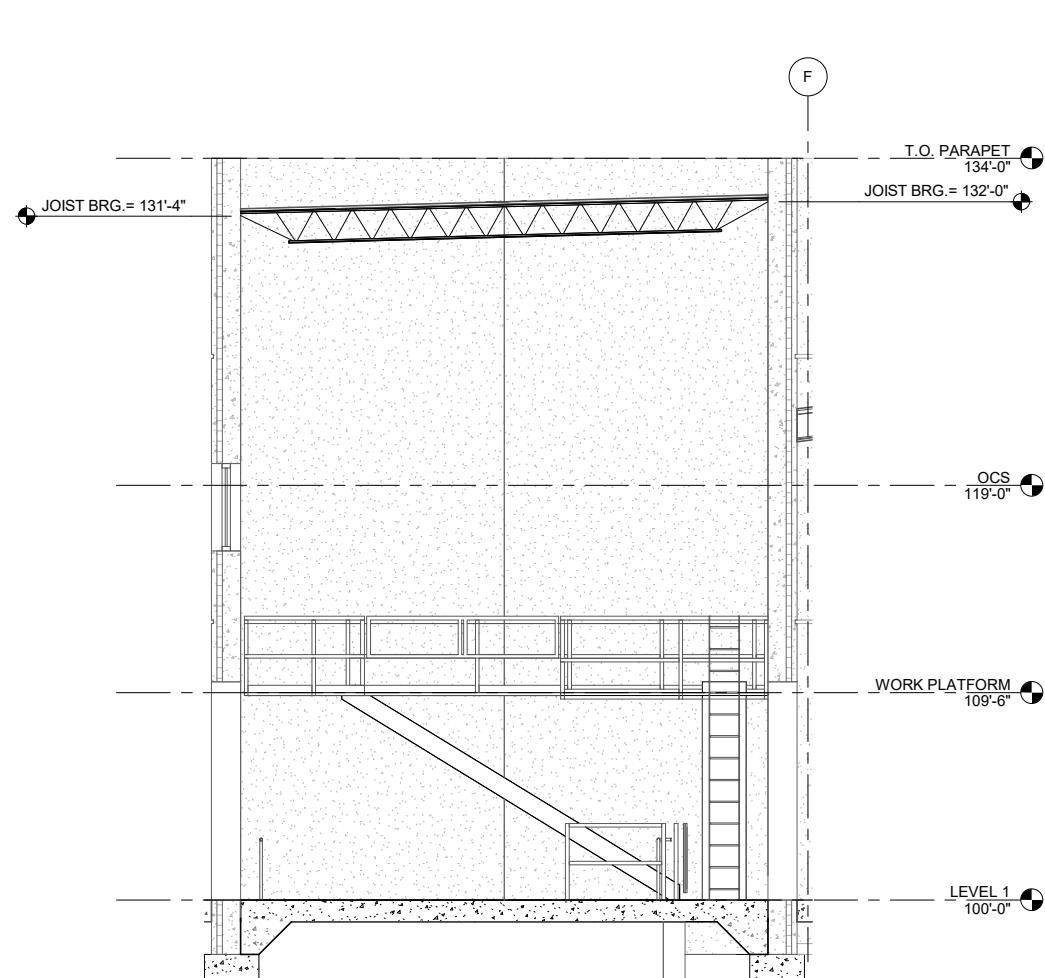


1 LLWA FOUNDATION SECTION

1/4

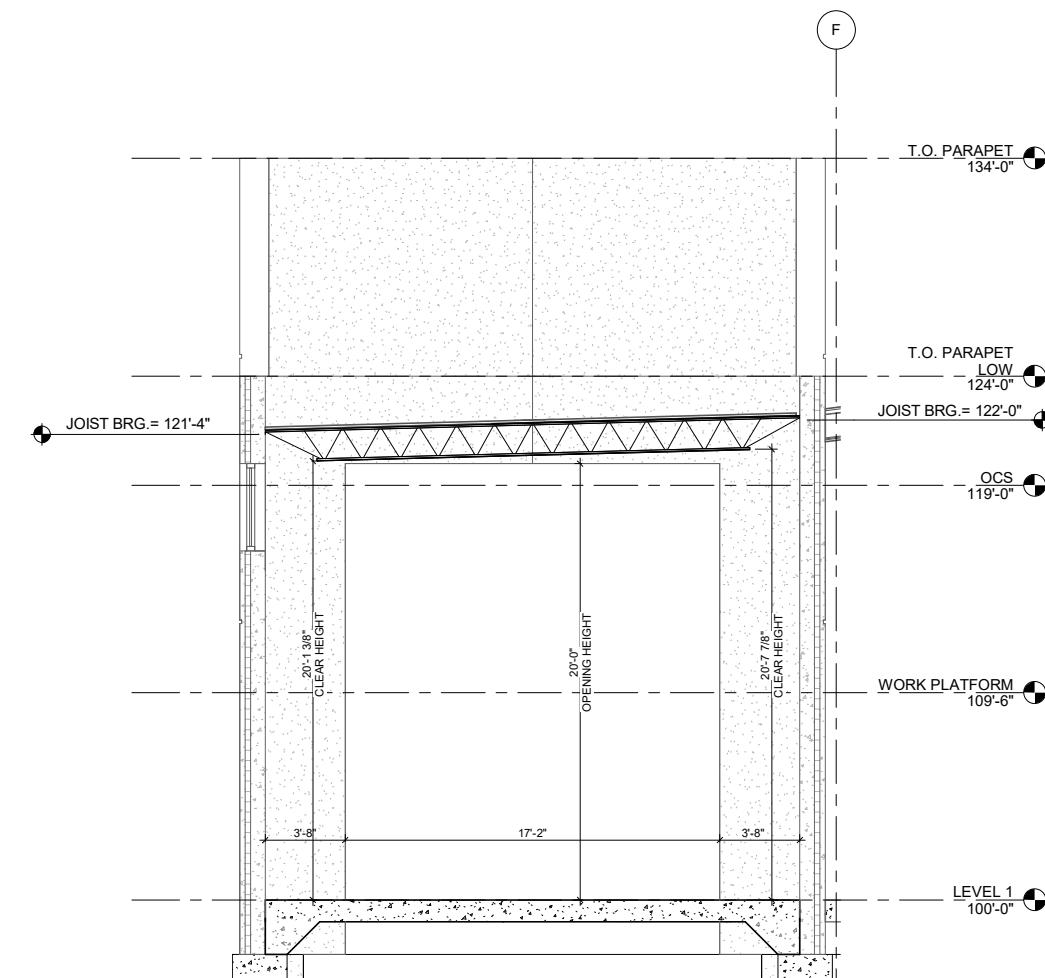
STRUCTURAL SHEET NOTES

1. REFER TO SHEET S003 FOR FOUNDATION SCHEDULE
2. STRUCTURAL JOIST 18K = 18 INCH DEPTH
3. STRUCTURAL JOIST 12K = 12 INCH DEPTH
4. STRUCTURAL JOIST 30SLH = 30 INCH DEPTH



2 HIGH ROOF SECTION

1/4" = 1'-0"

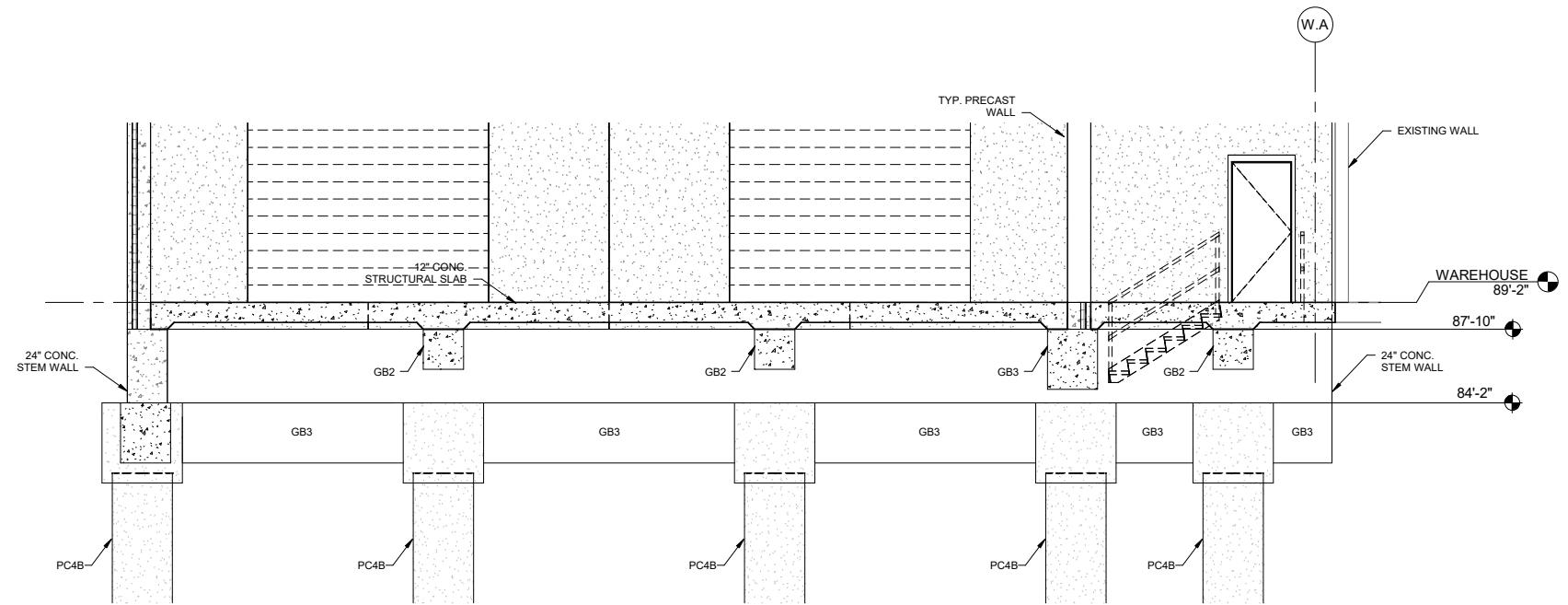


1 LOW ROOF SECTION

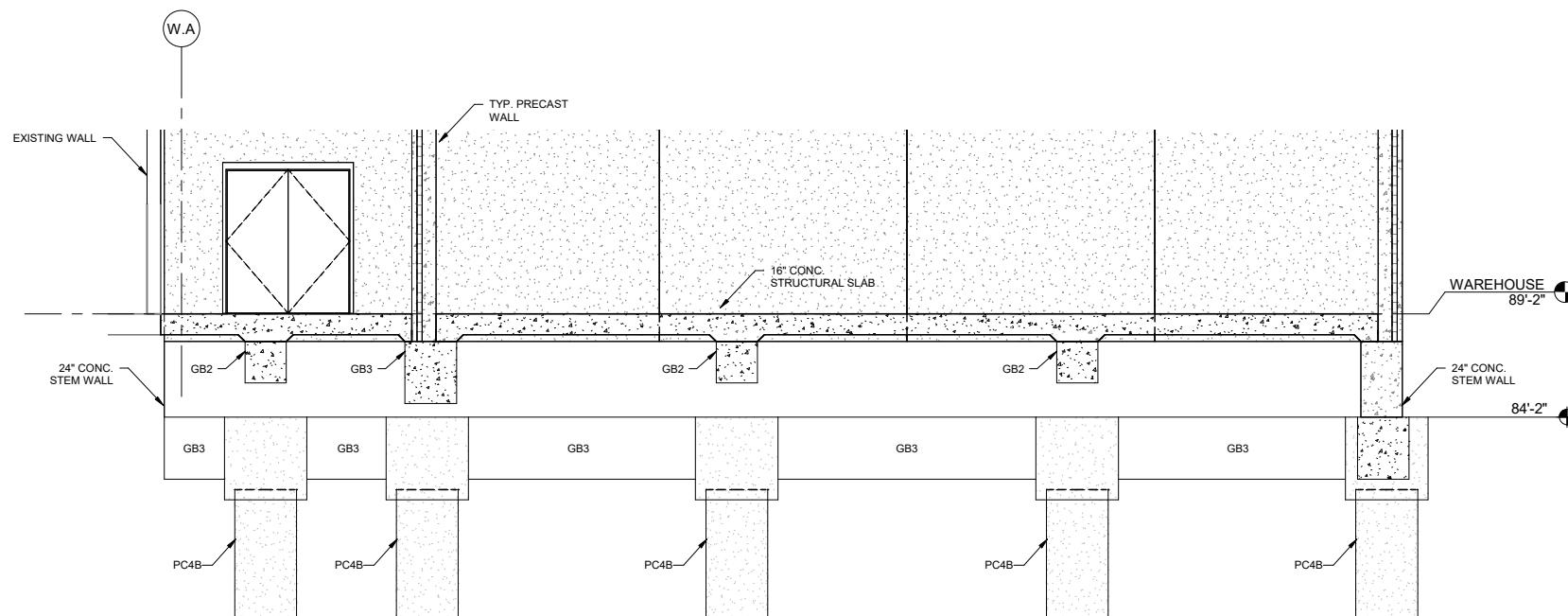
1/4" = 1'-0"

0 2' 4' 8'

REV	DATE	DESCRIPTION	DESIGNED BY	JT	RideKC STREETCAR	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	VEHICLE MAINTENANCE FACILITY	EXPANSION SECTIONS ROOF FRAMING	SCALE FOR 22" x 34":
	8/27/2019	30% DESIGN SUBMITTAL	CHECKED BY	BS							As indicated
			DRAWN BY	JT							FILENAME:
			CHECKED BY	BS							CONTRACT NO.:
			APPROVED BY	NKS							10147326
			DATE:								VOLUME:
											DRAWING NO.:
											SHEET NO.:
											42



2 WAREHOUSE EAST FOUNDATION SECTION
1/4" = 1'-0"



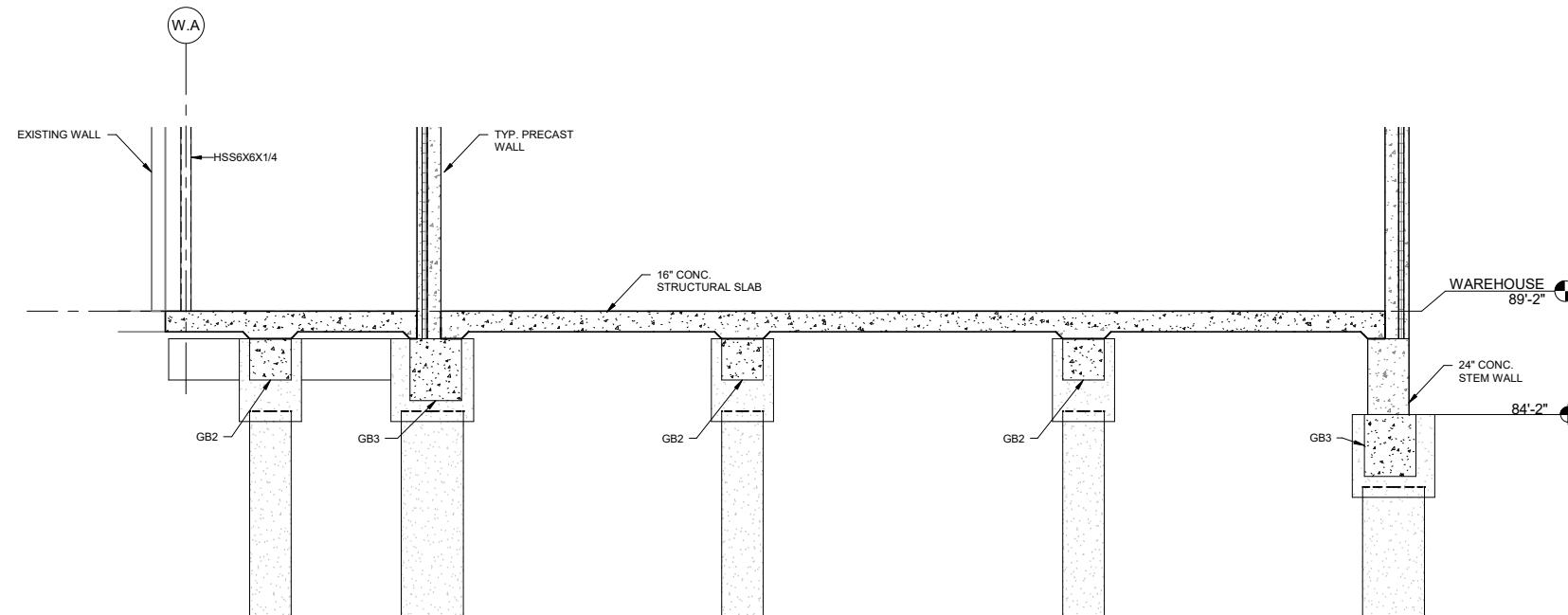
1 WAREHOUSE WEST FOUNDATION SECTION
1/4" = 1'-0"

STRUCTURAL SHEET NOTES
REFER TO SHEET S003 FOR FOUNDATION
SCHEDULE
STRUCTURAL JOIST 18K = 18 INCH DEPTH
STRUCTURAL JOIST 12K = 12 INCH DEPTH
STRUCTURAL JOIST 30SLH = 30 INCH DEPTH

REV	DATE	DESCRIPTION	DESIGNED BY	JT		 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION		SCALE FOR 22"x34":
	8/27/2019	30% DESIGN SUBMITTAL	CHECKED BY	BS					VEHICLE MAINTENANCE FACILITY		As indicated
			DRAWN BY	JT					WAREHOUSE SECTIONS FOUNDATION		FILENAME:
			CHECKED BY	BS					SHEET 1 OF 2		CONTRACT NO.:
			APPROVED BY	NKS							10147326
			DATE:	8/27/2019			NOT FOR CONSTRUCTION				VOLUME:
PLOT DATE: 8/23/2019 2:31:11 PM									DRAWING NO.:	Sheet No.:	S611 43

STRUCTURAL SHEET NOTES

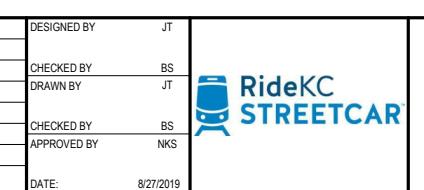
1. REFER TO SHEET S003 FOR FOUNDATION SCHEDULE
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3. STRUCTURAL JOIST 12K = 12 INCH DEPTH
4. STRUCTURAL JOIST 30SLH = 30 INCH DEPTH



1 TYPICAL WAREHOUSE FOUNDATION SECTION
1/4" = 1'-0"

0 2' 4' 8'

REV	DATE	DESCRIPTION	DESIGNED BY	JT
	8/27/2019	30% DESIGN SUBMITTAL	CHECKED BY	BS
			DRAWN BY	JT
			CHECKED BY	BS
			APPROVED BY	NKS
			DATE:	8/27/2019



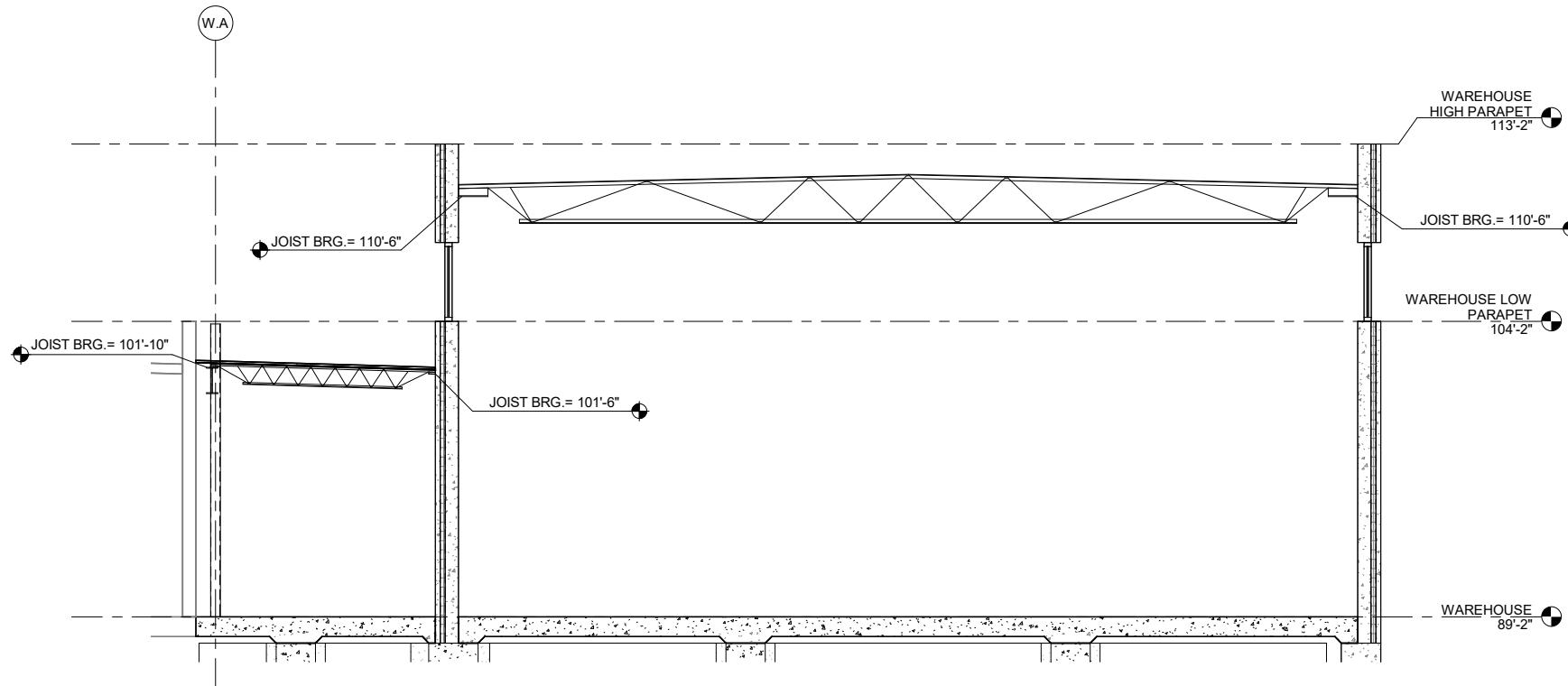
PRELIMINARY PLANS - 30%		DATE: 08-27-2019
FDR 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856		
NOT FOR CONSTRUCTION		

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
WAREHOUSE SECTIONS FOUNDATION
SHEET 2 OF 2

SCALE FOR 22"x34": As indicated	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	S612
SHEET NO.:	44

STRUCTURAL SHEET NOTES

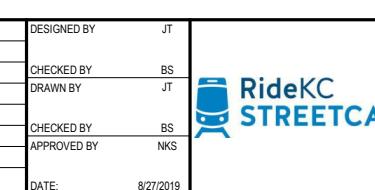
1. REFER TO SHEET S003 FOR FOUNDATION SCHEDULE
2. STRUCTURAL JOIST 18K = 18 INCH DEPTH
3. STRUCTURAL JOIST 12K = 12 INCH DEPTH
4. STRUCTURAL JOIST 30SLH = 30 INCH DEPTH



1 TYPICAL WAREHOUSE ROOF FRAMING SECTION
1/4" = 1'-0"

0 2' 4' 8'

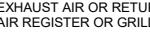
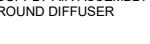
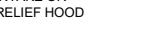
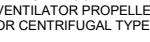
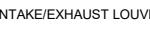
REV	DATE	DESCRIPTION
	8/27/2019	30% DESIGN SUBMITTAL
		DESIGNED BY JT
		CHECKED BY BS
		DRAWN BY JT
		CHECKED BY BS
		APPROVED BY NKS
		DATE: 8/27/2019

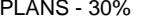


PRELIMINARY PLANS - 30%	DATE: 08-27-2019
 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	
NOT FOR CONSTRUCTION	

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
WAREHOUSE SECTIONS ROOF FRAMING

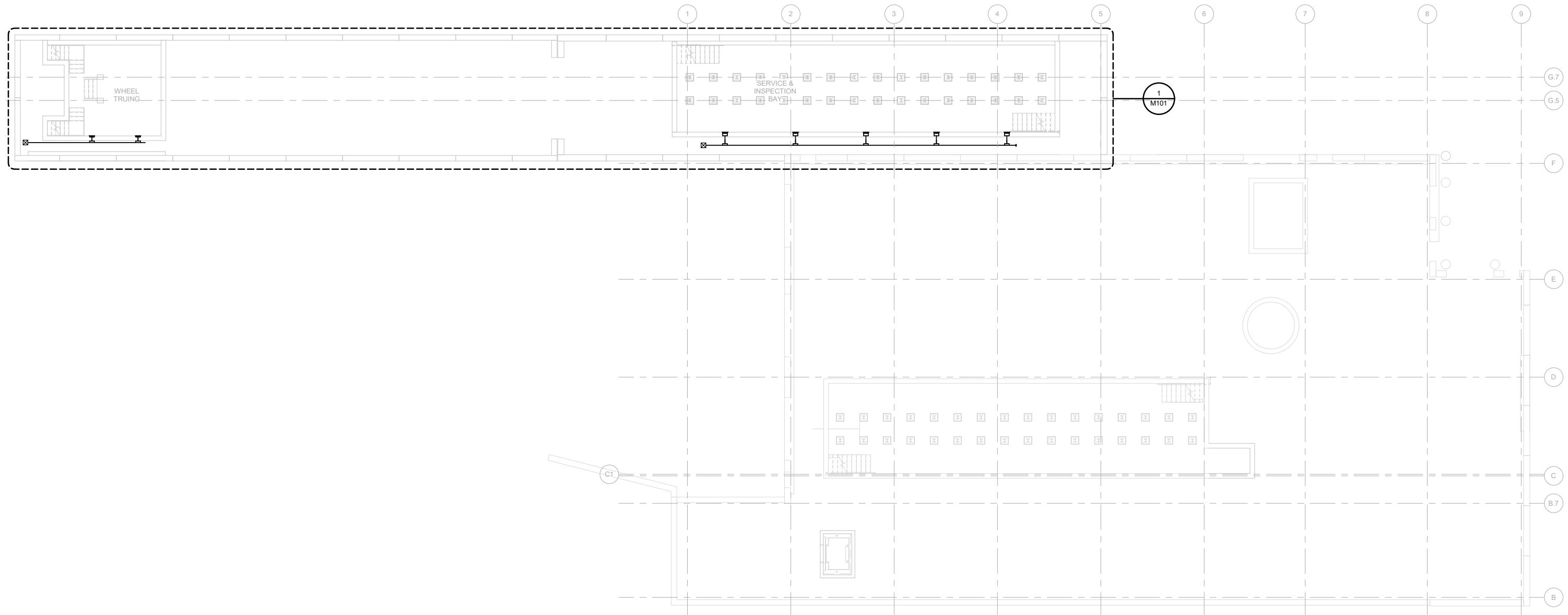
SCALE FOR 22" x 34":
As indicated
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: S613
SHEET NO.: 45

HVAC ABBREVIATIONS		HVAC SYMBOLOGY		HVAC CONTROL SYMBOLOGY		AIR FLOW SCHEMATIC AND TEMPERATURE CONTROL DIAGRAM SYMBOLOGY	
AC/HR	AIR CHANGES PER HOUR	HVAC	HEATING, VENTILATING AND AIR CONDITIONING				
AC-1	UNITARY AND WALL MOUNTED AIR CONDITIONING UNIT AND NUMBER	ID	INSIDE DIAMETER	 24x18	SUPPLY AIR OR OUTSIDE AIR DUCT UP (SECTION CUT, FIRST DIMENSION DUCT WIDTH)		TEMPERATURE CONTROLLER
ACC-1	AIR COOLED CONDENSING UNIT AND NUMBER	IN	INCH		SUPPLY AIR OR OUTSIDE AIR DUCT DOWN (NO SECTION CUT)		TEMPERATURE TRANSMITTER
Æ	ROUND OR DIAMETER	KW	KILOWATT		RETURN AIR DUCT UP (SECTION CUT)		TEMPERATURE SWITCH
AFF	ABOVE FINISHED FLOOR	LAT	LEAVING AIR TEMPERATURE		RETURN AIR DUCT DOWN (NO SECTION CUT)		THERMOSTAT
AHU-1	AIR HANDLING UNIT AND NUMBER	LB	POUNDS		EXHAUST AIR DUCT UP (NO SECTION CUT)		TEMPERATURE SENSOR
AI	ANALOG INPUT	LB/HR	POUNDS PER HOUR		EXHAUST AIR DUCT DOWN (NO SECTION CUT)		TEMPERATURE INDICATOR
ALUM	ALUMINUM	LWT	LEAVING WATER TEMPERATURE		ROUND ELBOW UP		PERCENTAGE TIMER
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION	MAX	MAXIMUM		ROUND ELBOW DOWN		RECEIVER CONTROLLER
ANSI	AMERICAN NATIONAL STANDARDS ASSOCIATION	MBH	1,000 BTU PER HOUR		TRANSITION - DOUBLE SIDED		HAND-OFF-AUTO
AO	ANALOG OUTPUT	MC	MECHANICAL CONTRACTOR		TRANSITION - ONE SIDED		MOTOR STARTER
APPROX	APPROXIMATELY	MEZZ	MEZZANINE		TRANSITION - RECTANGULAR TO ROUND DUCT		DAMPER ACTUATOR
ARCH	ARCHITECTURAL	MFR	MANUFACTURER		STANDARD BRANCH - FOR SUPPLY AIR W/ EXTRACTOR AND RETURN AIR W/O EXTRACTOR		PRESSURE INDICATOR
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS	MIN	MINIMUM		ELBOW - W/TURNING VANE (RECTANGULAR)		FREEZE STAT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	MTD	MOUNDED		ELBOW - W/TURNING VANES (RECTANGULAR), SMOOTH RADIUS		FIRE STAT
BHP	BRAKE HORSEPOWER	N.C.	NORMALLY CLOSED		GOOSENECK HOOD (COWL)		DIFFERENTIAL PRESSURE SWITCH
BI	BINARY INPUT	N.O.	NORMALLY OPEN		RECTANGULAR DUCT OR OPENING SIZE FIRST NUMBER INDICATES SIZE OF SIDE SHOWN		SMOKE DETECTOR
BO	BINARY OUTPUT	N/A	NOT APPLICABLE		ROUND DUCT SIZE		FLOW SWITCH
BOD	BOTTOM OF DUCT, BASIS OF DESIGN AS APPLICABLE	NO	NUMBER		RECTANGULAR DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW		PRESSURE SWITCH
BOP	BOTTOM OF PIPE	NTS	NOT TO SCALE		ROUND DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW		TIME DELAY
BTU	BRITISH THERMAL UNIT	OA	OUTSIDE AIR		HIDDEN DUCT		MINIMUM POSITION RELAY
BTUh	BRITISH THERMAL UNIT PER HOUR	OB	OPPOSED BLADE DAMPER		DUCT ELEVATION TAG ABOVE FINISH FLOOR		SIGNAL
CB-01	CHILLED BEAM DESIGNATION	OD	OUTSIDE DIAMETER		PRESSURE/TEMPERATURE TEST PLUG (PETE PLUG OR EQUAL)		ANALOG OUTPUT
CFM	CUBIC FEET PER MINUTE	OPNG	OPENING		SOUND ATTENUATOR		ANALOG INPUT
CLG	CEILING	P-1	PUMP AND NUMBER		SPLITTER DAMPER		DIGITAL OUTPUT
CONST	CONSTRUCTION	PC	PLUMBING CONTRACTOR		MOD = MOTOR OPERATED DAMPER		DIGITAL INPUT
CONT	CONTINUED	PSI	POUNDS PER SQUARE INCH		FIRE DAMPER		COMMON PORT
CONTR	CONTRACTOR	QTY	QUANTITY		SMOKE DAMPER		SIGNAL PORT
COORD	COORDINATE	RA	RETURN AIR		SMOKE AND FIRE DAMPER		NORMALLY OPEN
DB	DRY BULB	REQD	REQUIRED		ZD = ZONE DAMPER		NORMALLY CLOSED
DIA	DIA METER	REV	REVISION				BALANCING VALVE
DN	DOWN	RH	RELATIVE HUMIDITY				RESISTANCE HEATING CONTACTOR
DWG	DRAWING	RPM	REVOLUTIONS PER MINUTE				TEST-AUTO
EAT	ENTERING AIR TEMPERATURE	RTU-1	ROOFTOP AIR CONDITIONING UNIT AND NUMBER				TEST-OFF-AUTO
EC	ELECTRICAL CONTRACTOR	SA	SUPPLY AIR				ELECTRIC SIGNAL
EF-1	EXHAUST FAN AND NUMBER	RZ-01	RADIANT ZONE PANEL "M" PREFIX IS MOW, "R" IS ROMF				PIPING
EFF	EFFICIENCY	SMACNA	Sheet Metal and Air Conditioning Contractors National Association				BULB-TYPE THERMOSTAT
EH-1	ELECTRIC HEATER AND NUMBER	SP	STATIC PRESSURE				DIESEL EXHAUST SENSOR
EL	ELEVATION	SPEC	SPECIFICATION				CARBON DIOXIDE SENSOR
EQUIP	EQUIPMENT	SQ	SQUARE				VOLUME DAMPER - MANUAL
ESP	EXTERNAL STATIC PRESSURE	STD	STANDARD				VOLUME DAMPER - MOTORIZED
EWT	ENTERING WATER TEMPERATURE	TEMP	TEMPERATURE				
EXIST	EXISTING	TSP	TOTAL STATIC PRESSURE				
FCU-1	FAN COIL UNIT AND NUMBER	TSTAT	THERMOSTAT				
FPM	FEET PER MINUTE	TYP	TYPICAL				
GA	GUAGE	UH-1	UNIT HEATER AND NUMBER				
GC	GENERAL CONTRACTOR	UNO	UNLESS NOTED OTHERWISE				
GPM	GALLONS PER MINUTE	UON	UNLESS OTHERWISE NOTED				
H-1	HUMIDIFIER AND NUMBER	VA	VARIABLE AIR VOLUME				
HOA	HAND-OFF-AUTOMATIC	VEL	VELOCITY				
HP	HORSEPOWER	VRV	VARIABLE REFRIGERANT VOLUME				
		VSD	VARIABLE SPEED DRIVE				
		VVT	VARIABLE VOLUME TERMINAL				
		W/	WITH				
		W/O	WITHOUT				
		WB	WET BULB				
MECHANICAL GENERAL NOTES							
1.	CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT SCOPE, UTILITY CONNECTIONS, AND ALL BUILDING SERVICES.	10.	CEILING DIFFUSER LOCATIONS SHALL BE AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLANS.				
2.	HOUSEKEEPING PAD SIZE AND FLOOR DRAIN LOCATIONS SHALL BE COORDINATED WITH THE SIZE AND LOCATION OF EXACT EQUIPMENT TO BE INSTALLED.	11.	LINEAR DIFFUSERS, REGISTERS, GRILLES, AND CEILING DIFFUSERS SHALL BE FURNISHED WITH MOUNTING FRAMES AND FEATURES IN ACCORDANCE WITH THE CEILING TYPE.				
3.	STANDARD DETAILS ILLUSTRATED ON THE DRAWINGS SHALL BE APPLIED IN ALL CASES WHERE THE FEATURE OCCURS IN THE SYSTEM DESIGN.	12.	PIPING CONNECTIONS TO AIR HANDLING UNIT COILS AND MAJOR EQUIPMENT SHALL BE FABRICATED WITH ISOLATION VALVES, FLANGES, AND/OR UNIONS POSITIONED TO ALLOW REMOVAL AND SERVICE OF THE COMPONENT PARTS.				
4.	ALL DUCTWORK SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS IN INCHES	13.	THERMOMETER WELLS SHALL BE INSTALLED ON TOP OR SIDE OF HORIZONTAL PIPING IN ORDER TO RETAIN GAUGE FLUID AND SO AS TO BE EASILY READ FROM THE FLOOR.				
5.	MAJOR EQUIPMENT SHOWN ON THE PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATIONS. THE CONTRACTOR SHALL VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTION IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED.	14.	PRESSURE GAUGES SHALL BE INSTALLED ON THE TOP OR SIDE OF HORIZONTAL PIPING SO AS TO BE EASILY READ FROM THE FLOOR.				
6.	SUPPORTS, ANCHOR BOLTS, AND HANGERS FOR ALL EQUIPMENT SPECIFIED IN DIVISION 23 SHALL CONFORM TO THE SPECIFICATIONS. MISCELLANEOUS STEEL BRACING SUPPORTS AND REINFORCING STEEL NEEDED TO SUPPORT EQUIPMENT SPECIFIED IN DIVISION 23 SHALL BE FURNISHED AS PART OF SCOPE OF WORK OF DIVISION 23.	15.	CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT PRIOR TO CUTTING ANY OPENING IN THE STRUCTURE.				
7.	DIFFUSERS, REGISTERS, AND GRILLES SHOWN ON THE MECHANICAL DRAWINGS SHALL BE IN ACCORDANCE WITH THE DIFFUSER AND GRILLE SCHEDULE. BRANCH DUCTS TO AIR DEVICES SHALL BE IN ACCORDANCE WITH THE SCHEDULE UNLESS NOTED OTHERWISE.	16.	DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES. REFER TO SPECIFICATIONS FOR SERVICE PRIORITY.				
8.	FIRE/SMOKE DAMPERS SHALL BE INSTALLED IN ALL DUCTWORK PENETRATIONS THROUGH FIRE/SMOKE WALLS, FLOORS, AND MECHANICAL FIRE RATED CHASES. DAMPERS SHALL MEET THE REQUIREMENTS OF THE FIRE/SMOKE WALL RATING AND BE "U.L." LABELED. REFER TO ARCHITECTURAL DRAWINGS FOR THE LOCATIONS OF ALL FIRE AND SMOKE WALLS.	17.	COORDINATE ANY DEVICE REQUIRING AN ACCESS PANEL WITH THE ARCHITECT.				
9.	SMOKE DETECTORS SHALL BE LOCATED AS INDICATED ON THE MECHANICAL PLANS AND IN CONFORMANCE WITH NFPA 90A AND LOCAL CODES.	18.	ALL PENETRATIONS THROUGH RATED WALLS, FLOORS AND PARTITIONS MUST BE INSTALLED AND FIRESADED TO MEET UL FIRE RESISTANCE LISTING DETAILS FOR THE PENETRATION.				
		19.	AIR INTAKE THROUGH ROOF SHALL BE A MINIMUM OF 10 FEET FROM EXHAUST FAN OUTLETS AND PLUMBING VENTS THROUGH ROOF.				
		20.	IN MECHANICAL ROOMS, MAINTAIN A MINIMUM OF 6'-6" VERTICAL CLEARANCE IN AISLE WAYS, AND WALKWAYS TO OVERHEAD EQUIPMENT, PIPING, DUCTWORK, CONDUIT, ETC., WHEN POSSIBLE.				

REV	DATE	DESCRIPTION	DESIGNED BY	JTG		 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION		SCALE FOR 22" x 34":
	08/27/19	30% DESIGN SUBMITTAL	CHECKED BY	NHM					VEHICLE MAINTENANCE FACILITY		As indicated
			DRAWN BY	RJB					MECHANICAL LEGEND AND ABBREVIATIONS		FILENAME:
			CHECKED BY	NHM							CONTRACT NO.:
			APPROVED BY	NHM							10147326
											VOLUME:
PLOT DATE: 08/26/2019 1:30:46 PM				DATE: 08/27/19			NOT FOR CONSTRUCTION				DRAWING NO.: M000 SHEET NO.: 46

GENERAL NOTES - VMF HVAC

A EQUIPMENT, DUCTWORK, PIPING, ETC. HAS NOT BEEN SIZED FOR THE 30% SET AND SHALL NOT BE SCALED FROM THE DRAWINGS. SIZES TO BE CONFIRMED DURING DETAILED DESIGN



VMF LLWA RENOVATION & EXPANSION HVAC PLAN

3/32" = 1'-0"

0 5.33' 10.67' 21.33' N

REV	DATE	DESCRIPTION	DESIGNED BY	JTG
08/27/19		30% DESIGN SUBMITTAL	CHECKED BY	NHM
			DRAWN BY	RJB
			CHECKED BY	NHM
			APPROVED BY	NHM
			DATE:	08/27/19



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PRELIMINARY PLANS - 30% DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION

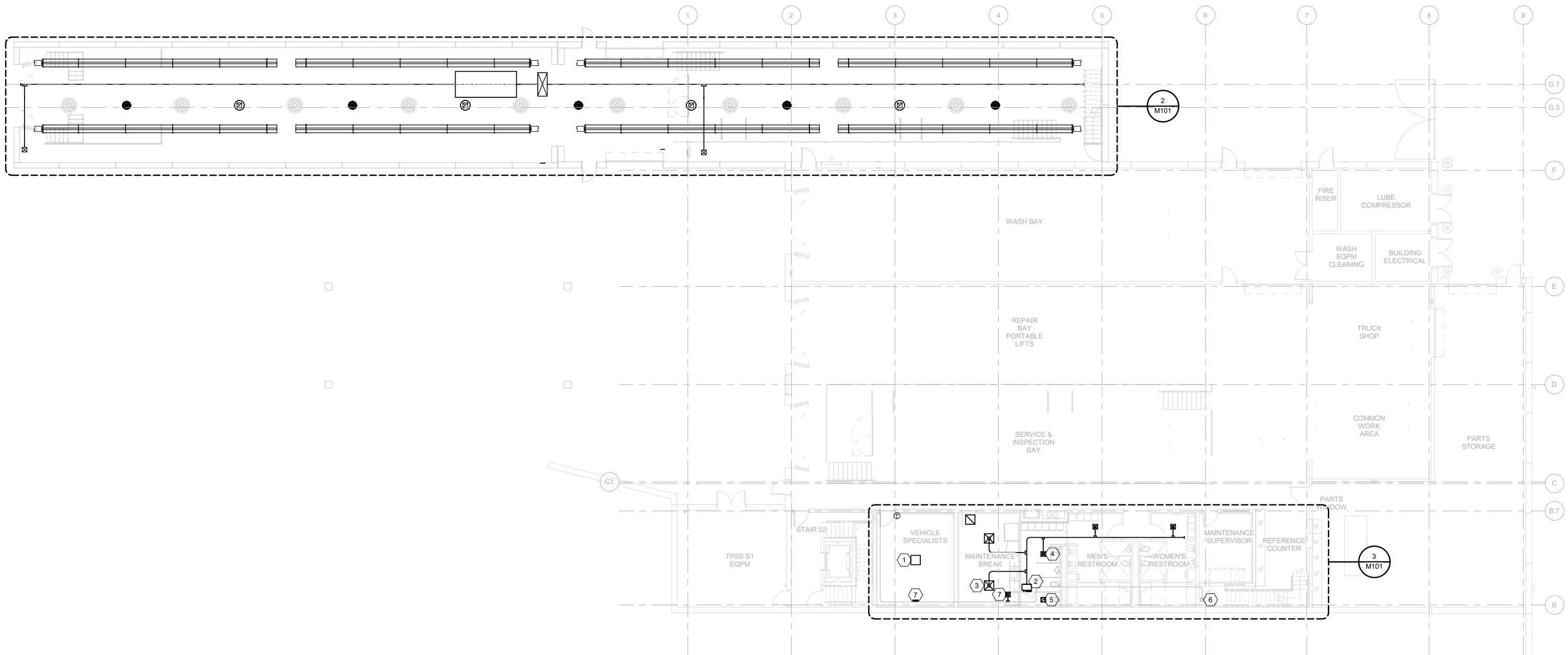
VEHICLE MAINTENANCE FACILITY
RENOVATION & EXPANSION HVAC PLANS
LOWER LEVEL WORK AREA

SCALE FOR 22" x 34":
3/32" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: M001 SHEET NO.: 47

GENERAL NOTES - VMF HVAC LEVEL 1 & 2

A EQUIPMENT, DUCTWORK, PIPING, ETC. HAS NOT BEEN SIZED FOR THE 30% SET AND SHALL NOT BE SCALED FROM THE DRAWINGS. SIZES TO BE CONFIRMED DURING DETAILED DESIGN.

B EXISTING DOAS SYSTEM CAPACITY SHALL BE REVIEWED DURING DETAILED DESIGN, TO CONFIRM EXISTING SYSTEMS CAN ACCOMMODATE ADDITIONAL CAPACITY.



VMF LEVEL 1 RENOVATION & EXPANSION HVAC PLANS

3/32" = 1'-0"

0 5.33' 10.67' 21.33' N

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08/27/19		30% DESIGN SUBMITTAL	CHECKED BY	NHM
			DRAWN BY	RJB
			CHECKED BY	NHM
			APPROVED BY	NHM
			DATE:	08/27/19



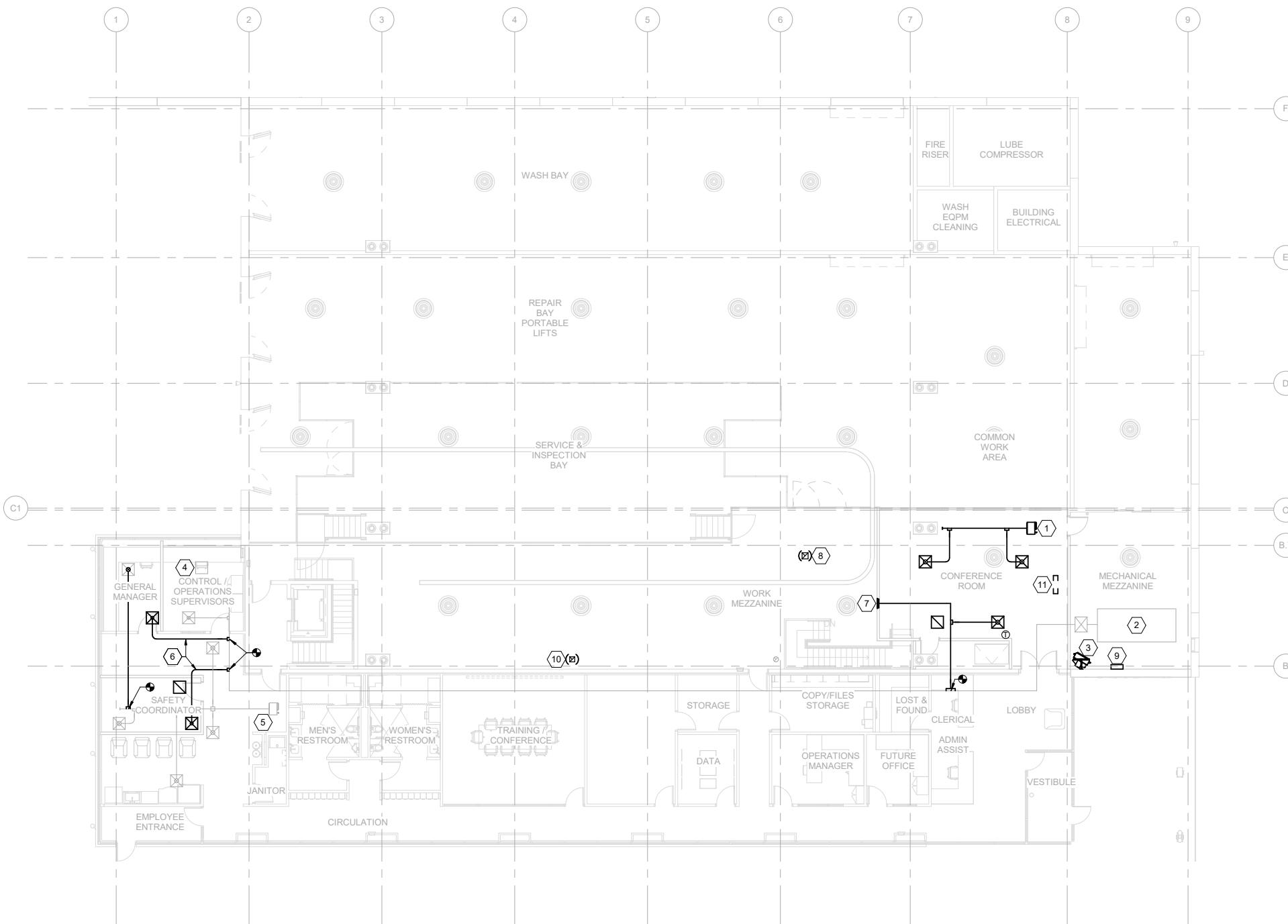
PRELIMINARY PLANS - 30%

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DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
RENOVATION & EXPANSION HVAC PLANS
LEVEL 1

SCALE FOR 22" x 34":
3/32" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: M002 SHEET NO.: 48



VMF LEVEL 2 RENOVATION PLAN

3/32" = 1'-0"

0 5.33' 10.67' 21.33'



REV	DATE	DESCRIPTION
	08/27/19	30% DESIGN SUBMITTAL



PRELIMINARY PLANS - 30%

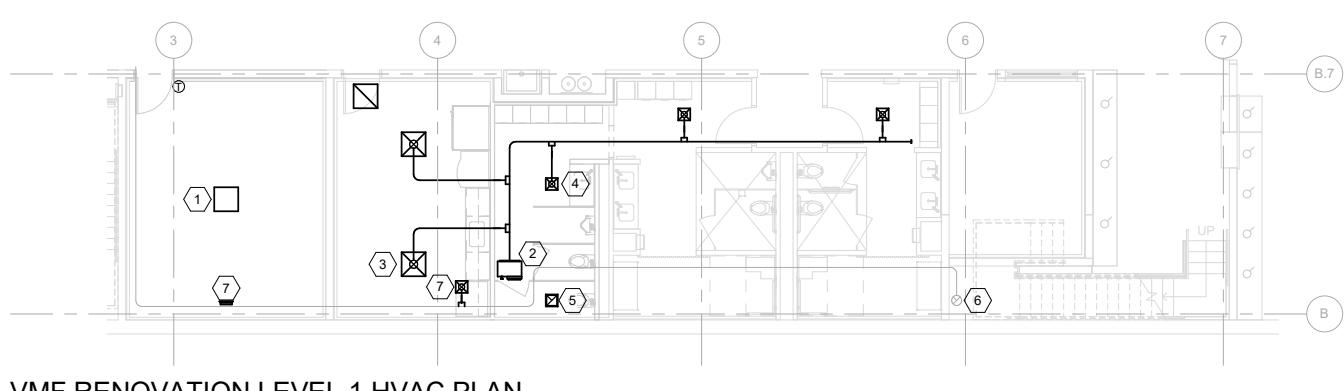
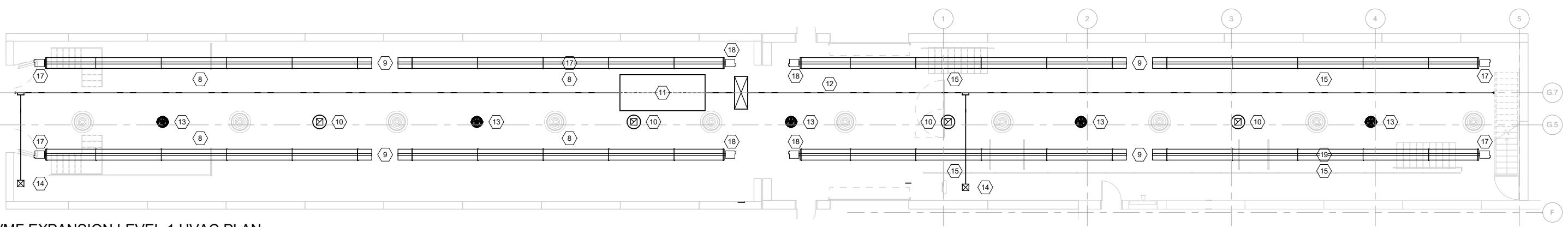
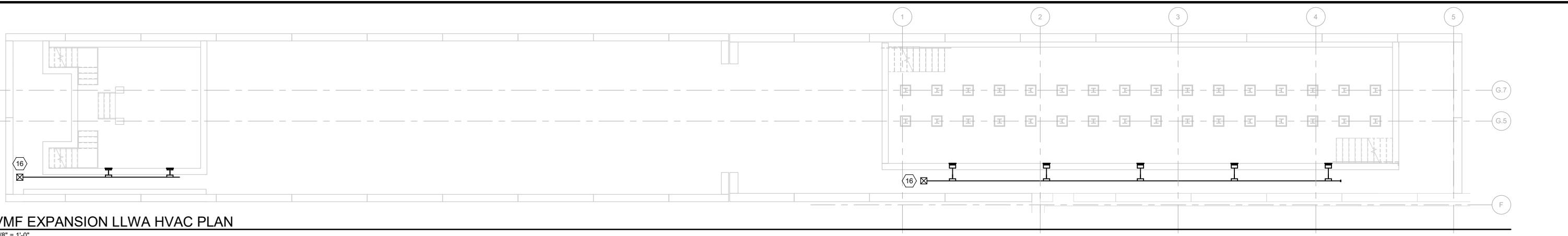


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DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
RENOVATION & EXPANSION HVAC PLANS
LEVEL 2

CALE FOR 22" x 34":	
32" = 1' 0"	
LENNAME:	
ONTRACT NO.:	
147326	
OLUME:	
RAWING NO.:	SHEET NO.:
M003	49



GENERAL NOTES - VMF HVAC LEVEL 1 & 2

A EQUIPMENT, DUCTWORK, PIPING, ETC. HAS NOT BEEN SIZED FOR THE 30% SET AND SHALL NOT BE SCALED FROM THE DRAWINGS. SIZES TO BE CONFIRMED DURING DETAILED DESIGN.
 B EXISTING DOAS SYSTEM CAPACITY SHALL BE REVIEWED DURING DETAILED DESIGN, TO CONFIRM EXISTING SYSTEMS CAN ACCOMMODATE ADDITIONAL CAPACITY.

KEYNOTES

- 1 NEW CEILING CASSETTE VRF FAN COIL UNIT. CONNECT TO NEW SYSTEM BRANCH CIRCUIT CONTROLLER IN MECHANICAL MEZZANINE AND TO NEW CONDENSING UNIT ON ROOF.
- 2 EXISTING VRF FAN COIL UNIT. RELOCATE IF REQUIRED TO ACCOMMODATE NEW WALLS.
- 3 EXTEND SUPPLY BRANCH DUCTS AND RELOCATE SUPPLY DIFFUSERS AND RETURN GRILLE IN REMODELED MAINTENANCE BREAK ROOM.
- 4 ADD NEW SUPPLY GRILLE TO SERVE RESTROOM EXPANSION, AND REBALANCE EXISTING VRF FAN COIL UNIT SUPPLY AIRFLOWS. FINAL AIRFLOW VALUES TO BE DETERMINED DURING DETAILED DESIGN.
- 5 NEW EXHAUST GRILLE AND EXHAUST DUCT UP TO LEVEL 2
- 6 EXISTING OUTSIDE AIR DUCT FROM LEVEL ABOVE.
- 7 COORDINATE EXISTING OUTSIDE AIR SUPPLY GRILLES/DIFFUSERS WITH NEW VEHICLE SPECIALISTS AND MAINTENANCE BREAK ROOM AREAS, AND REVISE/RELOCATE AS REQUIRED.
- 8 NEW GAS-FIRED INFRARED HEATER
- 9 NEW GAS-FIRED INFRARED HEATER FLUE THROUGH ROOF.
- 10 NEW ROOF MOUNTED DIRECT DRIVE EXHAUST FAN.
- 11 NEW GAS FIRED DX MAKE-UP AIR UNIT ON ROOF
- 12 ROUTE DUCTWORK ABOVE BRIDGE CRANE.
- 13 NEW DE-STRATIFICATION FAN, TYP.
- 14 SUPPLY DUCTWORK DOWN.
- 15 NEW GAS-FIRED INFRARED HEATER MOUNTED ABOVE BRIDGE CRANE.
- 16 SUPPLY DUCTWORK DOWN TO UNDERGROUND, BELOW-SLAB SA DUCTWORK SHALL BE HDPE. PROVIDE SIDEWALL SUPPLY REGISTERS IN PIT WALL. PROVIDE BALANCE DAMPER W/ REGISTER.
- 17 ROUTE INFRARED HEATER COMBUSTION AIR INTAKE DUCT THROUGH SIDEWALL AND TERMINATE WITH WALL CAP.
- 18 ROUTE INFRARED HEATER COMBUSTION AIR INTAKE DUCT UP THROUGH ROOF AND TERMINATE WITH RAIN CAP.
- 19



0 4.00' 8.00' 16.00'

REV	DATE	DESCRIPTION
	08/27/19	30% DESIGN SUBMITTAL
		DESIGNED BY JTG
		CHECKED BY NHM
		DRAWN BY RJB
		CHECKED BY NHM
		APPROVED BY NHM
		DATE: 08/27/19



10450 Holmes Road
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Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

PRELIMINARY PLANS - 30%	DATE: 08-27-2019
NOT FOR CONSTRUCTION	

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
RENOVATION & EXPANSION HVAC PLANS

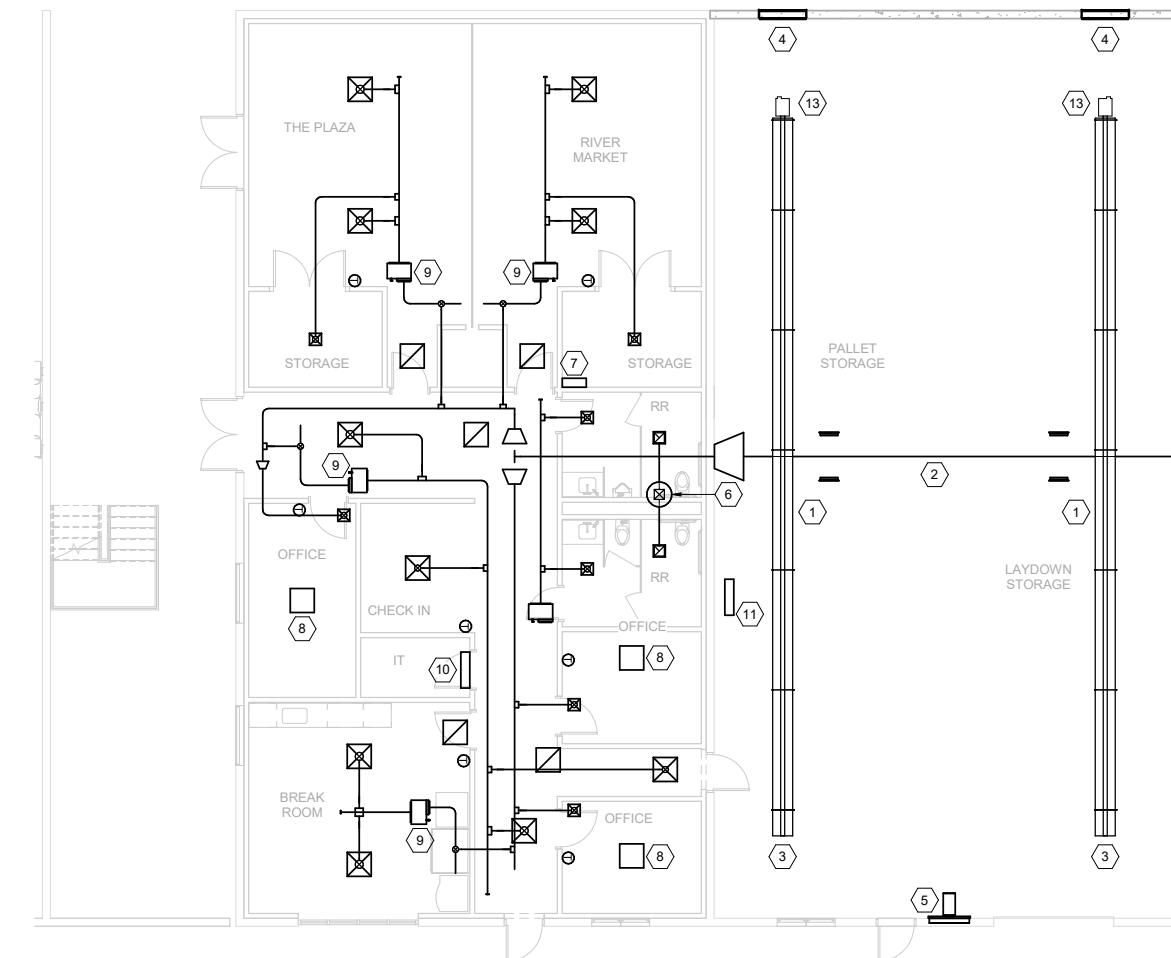
SCALE FOR 22"x34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	M101
SHEET NO.:	50

GENERAL DEMOLITION NOTE

A REMOVE ALL EXISTING HVAC IN EXISTING WAREHOUSE BUILDING INCLUDING BUT NOT LIMITED TO: AIR HANDLING UNIT AND ASSOCIATED DUCTWORK, DIFFUSERS, AND CONTROLS; EXHAUST FANS SERVING RESTROOM AND OPEN STORAGE AREA, AND ANY MISCELLANEOUS DUCTWORK, AND PIPING WHICH HAS BEEN ABANDONED IN PLACE.

WAREHOUSE - HVAC DEMOLITION PLAN

1/8" = 1'-0"



WAREHOUSE - RENOVATION HVAC PLAN

1/8" ≈ 1'-0"



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CHECKED BY	NHM	
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CHECKED BY	NHM	
APPROVED BY	NHM	
DATE:	08/27/19	

PRELIMINARY PLANS - 30%

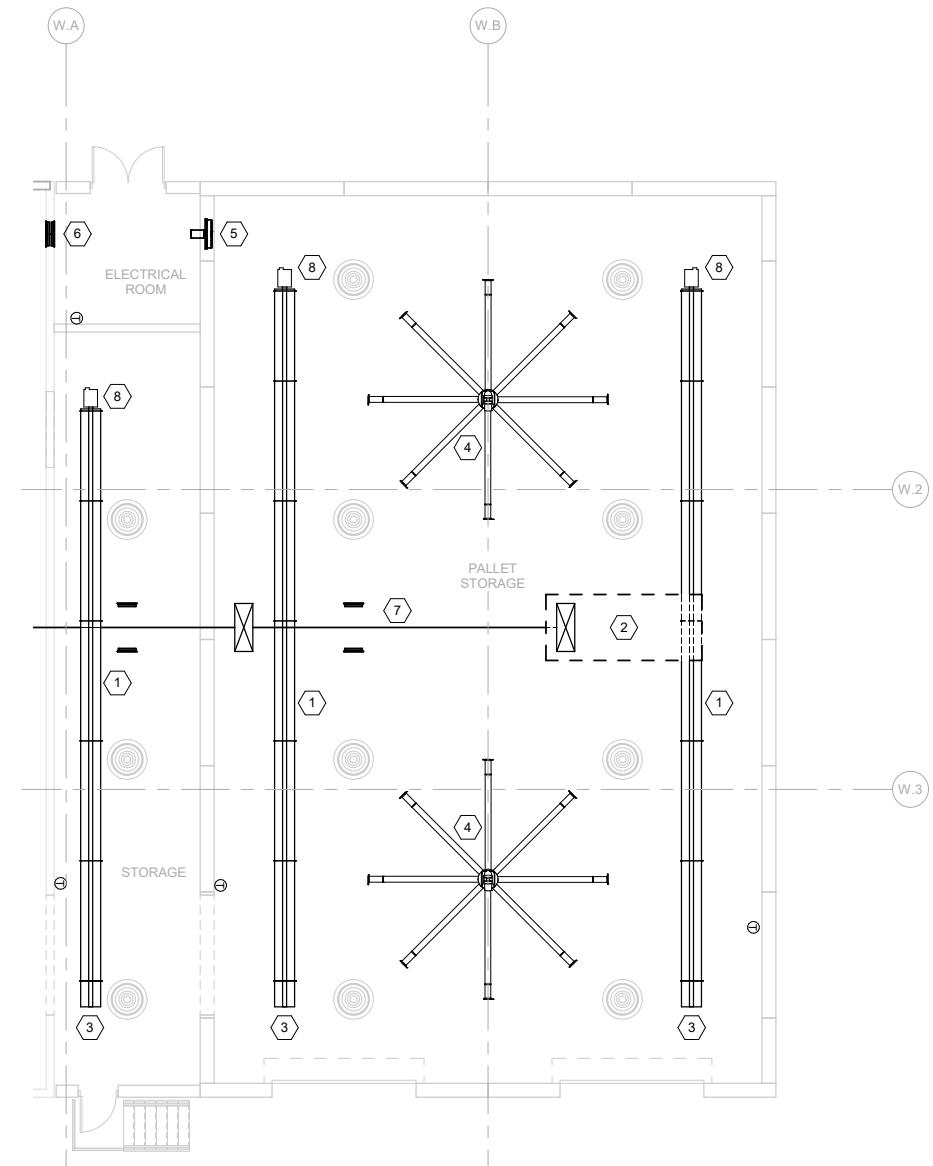
DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
DEMOLITION & RENOVATION HVAC PLAN
WAREHOUSE

CALE FOR 22"X34"	
8" = 1'-0"	
LENANE:	
ONTRACT NO.:	
147326	
OLUME:	
RAWING NO.:	SHEET NO.:
M102	51

KEYNOTES

- 1 NEW GAS-FIRED INFRARED HEATER
- 2 DEDICATED OUTDOOR AIR HANDLING UNIT ON ROOF
- 3 NEW GAS-FIRED INFRARED HEATER FLUE THROUGH ROOF.
- 4 DESTRATIFICATION VENTILATION FAN, BIG ASS FAN OR EQUIVALENT.
- 5 SIDEWALL EXHAUST FAN.
- 6 TRANSFER OPENING WITH GRILLE.
- 7 OUTDOOR AIR DUCTWORK
- 8 ROUTE INFRARED HEATER COMBUSTION AIR INTAKE DUCT THROUGH SIDEWALL AND TERMINATE WITH WALL CAP.



WAREHOUSE - EXPANSION HVAC PLAN

1/8" = 1'-0"

0 4.00' 8.00' 16.00'



REV	DATE	DESCRIPTION
08/27/19		30% DESIGN SUBMITTAL



DATE: 08/27/19

PRELIMINARY PLANS - 30%	DATE: 08-27-2019
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NOT FOR CONSTRUCTION	

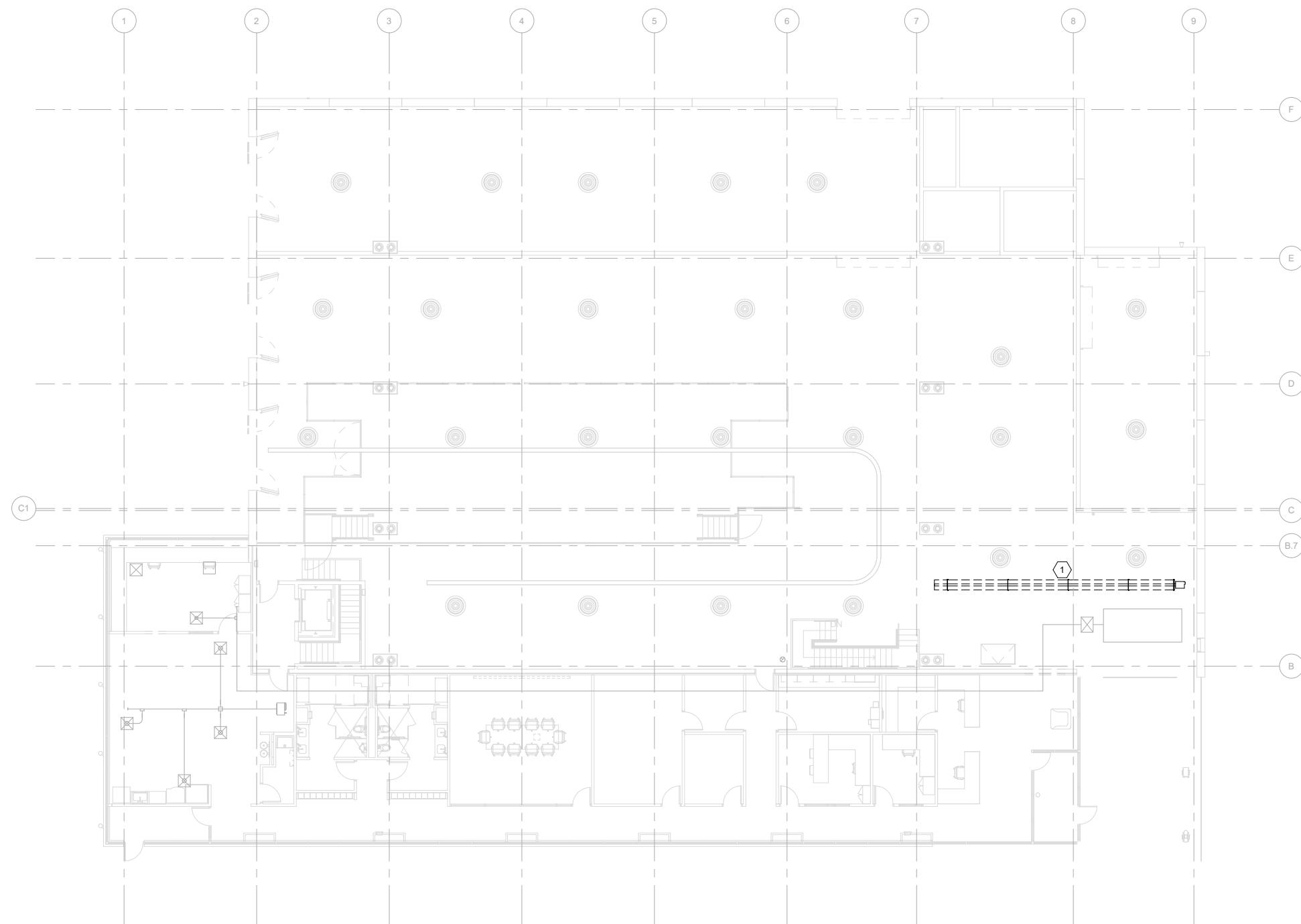
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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION HVAC PLAN
WAREHOUSE

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: M103
SHEET NO.: 52

KEYNOTES

1 REMOVE EXISTING GAS FIRED INFRARED HEATER, CONTROLS, AND FLUE. SEAL FLUE ROOF PENETRATION. CAP BRANCH GAS PIPING AND MAINTAIN FOR EXTENSION TO NEW GAS UNIT HEATER.



VMF LEVEL 2 DEMOLITION PLAN

3/32" = 1'-0"

0 5.33' 10.67' 21.33' N

REV	DATE	DESCRIPTION	DESIGNED BY	JTG
08/27/19		30% DESIGN SUBMITTAL	CHECKED BY	NHM
			DRAWN BY	RJB
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			APPROVED BY	JTG
			DATE:	08/27/19



PRELIMINARY PLANS - 30%		DATE: 08-27-2019
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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION HVAC PLAN
LEVEL 2

SCALE FOR 22"x34":
3/32" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: MD101
SHEET NO.: 53

PLUMBING PIPING LEGEND

— — —	DOMESTIC COLD WATER
— — —	DOMESTIC HOT WATER
— — —	DOMESTIC HOT WATER RECIRCULATING
— 180 °	DOMESTIC HOT WATER AT TEMP SHOWN
— W —	SOIL OR WASTE
— BD —	BUILDING DRAIN
— BS —	BUILDING SEWER
— · · · · —	SANITARY VENT
— SD —	STORM DRAIN ABOVE FLOOR
— · SD — — —	STORM DRAIN BELOW FLOOR
— OD —	STORM OVERFLOW DRAIN ABOVE FLOOR
— · OD — — —	STORM OVERFLOW DRAIN BELOW FLOOR
— SS —	STORM SEWER
— AW —	ACID WASTE ABOVE FLOOR
— · AW — — —	ACID WASTE BELOW FLOOR
— · AV — — —	ACID VENT
— GW —	GREASE WASTE
— SOD —	SEDIMENT & OIL DRAIN
— NG —	NATURAL GAS (LOW PRESSURE 14" WC)
— MNG —	MEDIUM PRESSURE NATURAL GAS (5 PSI)
— LPG —	LIQUEFIED PETROLEUM GAS
— T —	TEMPERED WATER
— TR —	TEMPERED WATER RECIRCULATION

PLUMBING SYMBOLS LEGEND

○ —	ELBOW UP
○ —	ELBOW DN
— ○ —	TEE - OUTLET DOWN
— ○ —	TEE - OUTLET UP
— E —	CAP
○ G —	P-TRAP
○ X —	GLOBE VALVE
○ O I —	BALL VALVE
○ X —	GATE VALVE
○ ■ —	BUTTERFLY VALVE
○ X —	BALANCING VALVE (CIRCUIT SETTER)
○ X —	MOTORIZED CONTROL VALVE - 2-WAY
○ X —	MOTORIZED CONTROL VALVE - 3-WAY
○ Y —	Y-STRAINER
○ X —	PLUG VALVE
○ P —	PRESSURE REGULATING VALVE
○ G —	PRESSURE GAUGE
○ P —	PRESSURE RELIEF VALVE
— T —	TEMPERATURE GAUGE
— S D —	SUCTION DIFFUSER

<u>PLUMBING ABBREVIATIONS</u>	
A	
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALM	ALARM
AMBI	AMBIENT
B	
B	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BC	BLOWER COIL
BFP	BACKFLOW PREVENTER
BP	BOOSTER PUMP
BPOC	BUILDING POINT OF CONNECTION (BAS TO EMCS)
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	
CAP	CAPACITY
CD	CONDENSATE DRAIN
CH	CHILLER
CO	DOUBLE CLEANOUT
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CT	COOLING TOWER
CW	COLD WATER
D	
(D)	DEMOLISH
DB	DRY BULB
DISC	DISCONNECT
DN	DOWN
E	
(E)	EXISTING TO REMAIN
EC	ELECTRICAL CONTRACTOR
EER	ENERGY EFFICIENCY RATIO
EL	ELEVATION
EMCS	ENERGY MONITORING AND CONTROL SYSTEM
ENT	ENTERING
ESEW	EMERGENCY SHOWER/EYEWASH COMBINATION
EVAP	EVAPORATIVE, EVAPORATE
EWC	ELECTRIC WATER COOLER
F	
F	FAN COIL
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FPWH	FROST PROOF WALL HYDRANT
FS	FLOOR SINK
FT	FOOT, FEET
°F	DEGREES FAHRENHEIT
G	
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
H	
H	HUMIDITY, HEIGHT
HOA	HAND OFF AUTO
HP	HORSEPOWER
HW	HOT WATER
HWC	HOT WATER RECIRC
Hz	HERTZ
I	
IN	INCHES
INV	INVERT
IW	INDUSTRIAL WASTE
K	
KW	KILOWATTS
L	
LBS	POUNDS (WT)

PLUMBING ABBREVIATIONS	
LWT	LEAVING WATER TEMPERATURE
M	
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	1000 BTUH
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MFG	MANUFACTURER, MANUFACTURING
MIN	MINIMUM
N	
(N)	NEW
NAT	NATURAL
NC	NOISE CRITERIA
NG	NATURAL GAS
NO	NUMBER
O	
OA	OPEN/CLOSE
OD	OVERFLOW ROOF DRAIN
OF	OVERFLOW
OP WT	OPERATING WEIGHT
P	
P	PUMP
PAUH	PACKAGED AIR HANDLING UNIT
PH	PHASE
POS	POSITION
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
R	
(R)	RELOCATED
RD	ROOF DRAIN
RPM	REVOLUTIONS PER MINUTE
RTU	FOOF TOP UNIT
S	
S/S	START/STOP
SAN	SANITARY SEWER
SD	STORM DRAIN
SQ	SQUARE
ST	STORM WATER
STA	STATUS
STOR	STORAGE
T	
T	TEMPERATURE
TCC	TEMPERATURE CONTROL CONTRACTOR
TYP	TYPICAL
U	
UP	UP
V	
V	VENT
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	
W	WIDTH
W.C.	WATER COLUMN
WB	WET BULB
WH	WATER HEATER
WT	WEIGHT

PLUMBING GENERAL NOTES

- 1 CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT SCOPE, UTILITY CONNECTIONS, AND ALL BUILDING SERVICES.
- 2 HOUSEKEEPING PAD SIZE AND FLOOR DRAIN LOCATIONS SHALL BE COORDINATED WITH THE SIZE AND LOCATION OF EXACT EQUIPMENT TO BE INSTALLED.
- 3 STANDARD DETAILS ILLUSTRATED ON THE DRAWINGS SHALL BE APPLIED IN ALL CASES WHERE THE FEATURE OCCURS IN THE SYSTEM DESIGN.
- 4 MAJOR EQUIPMENT SHOWN ON THE PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATIONS. THE CONTRACTOR SHALL VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTION IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED.
- 5 SUPPORTS, ANCHOR BOLTS, AND HANGERS FOR ALL EQUIPMENT SPECIFIED IN DIVISIONS 20 AND 22 SHALL CONFORM TO THE SPECIFICATIONS. MISCELLANEOUS STEEL BRACING SUPPORTS AND REINFORCING STEEL NEEDED TO SUPPORT EQUIPMENT SPECIFIED IN DIVISIONS 20 AND 22 SHALL BE FURNISHED AS PART OF SCOPE OF WORK OF DIVISION 22.
- 6 THERMOMETER WELLS SHALL BE INSTALLED ON TOP OR SIDE OF HORIZONTAL PIPING IN ORDER TO RETAIN GAUGE FLUID AND SO AS TO BE EASILY READ FROM THE FLOOR.
- 7 PRESSURE GAUGES SHALL BE INSTALLED ON THE TOP OR SIDE OF HORIZONTAL PIPING SO AS TO BE EASILY READ FROM THE FLOOR.
- 8 CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT PRIOR TO CUTTING ANY OPENING IN THE STRUCTURE.
- 9 DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES. REFER TO SPECIFICATIONS FOR SERVICE PRIORITY.
- 10 COORDINATE ANY DEVICE REQUIRING AN ACCESS PANEL WITH THE ARCHITECT.
- 11 ALL PENETRATIONS THROUGH RATED WALLS, FLOORS AND PARTITIONS MUST BE INSTALLED AND FIRESAFED TO MEET UL FIRE RESISTANCE LISTING DETAILS FOR THE PENETRATION.
- 12 IN MECHANICAL ROOMS, MAINTAIN A MINIMUM OF 6'-6" VERTICAL CLEARANCE IN AISLE WAYS, AND WALKWAYS TO OVERHEAD EQUIPMENT, PIPING, DUCTWORK, CONDUIT, ETC., WHEN POSSIBLE.



PRELIM
EDR

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DICTIONARY PLATE

1-3471

: 000856

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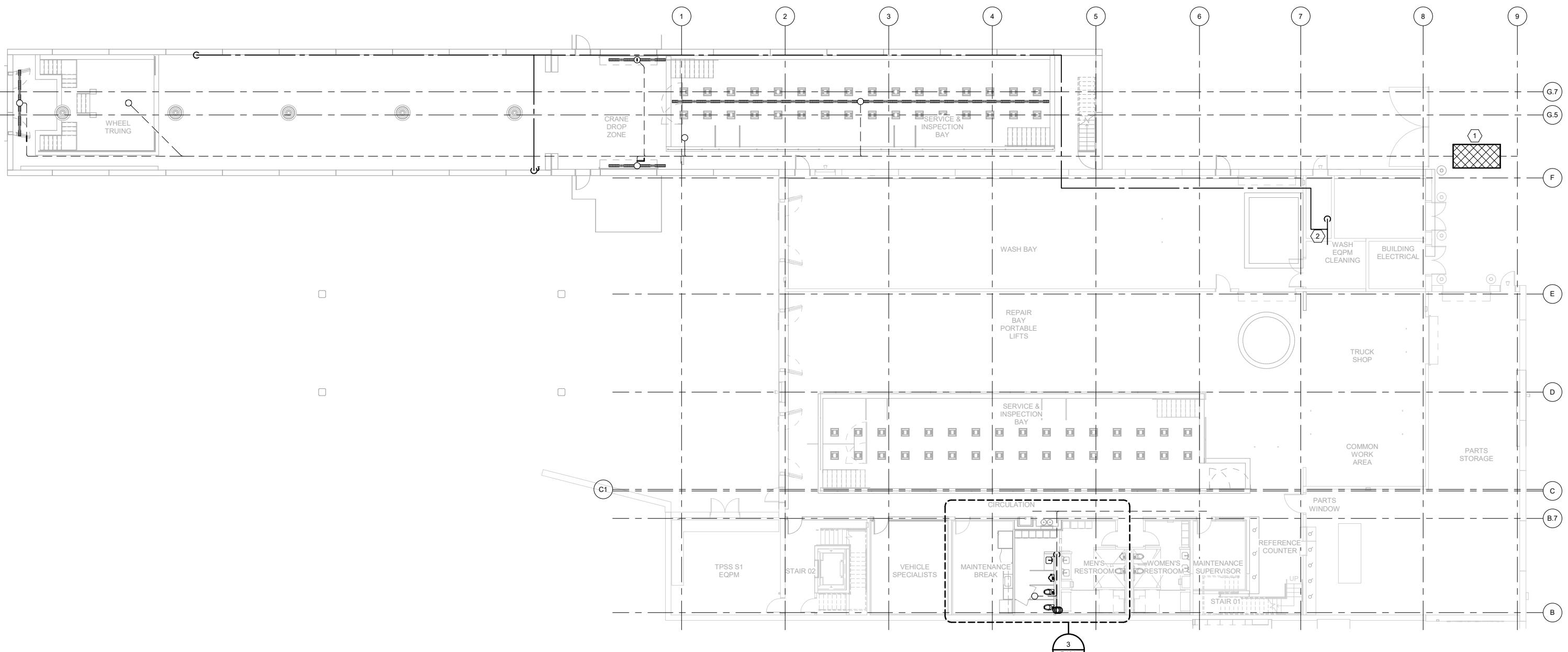
10 of 10

DATE: 08-27-20

KANSAS CITY STREETCAR MAIN STREET EXTENSION

VEHICLE MAINTENANCE FACILITY PLUMBING LEGEND, ABBREVIATIONS AND GENERAL NOTES

SCALE FOR 22"X34": 3/8" = 1'-0" FILENAME: CONTRACT NO.: 10147326 VOLUME: DRAWING NO.: P000	SHEET NO.: 54
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VMF LEVEL 1 RENOVATION & EXPANSION PLUMBING PLAN

3/32" = 1'-0"

0 5.33' 10.67' 21.33'



REV	DATE	DESCRIPTION	DESIGNED BY	JTG	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22"x34": 3/32" = 1'-0"
08/27/19		30% DESIGN SUBMITTAL	CHECKED BY	NHM			VEHICLE MAINTENANCE FACILITY	FILENAME:
			DRAWN BY	RJB			RENOVATION & EXPANSION PLUMBING PLANS	CONTRACT NO.:
			CHECKED BY	NHM			LEVEL 1	10147326
			APPROVED BY	NHM				VOLUME:
			DATE:	08/27/19				DRAWING NO.: P001
								SHEET NO.: 55

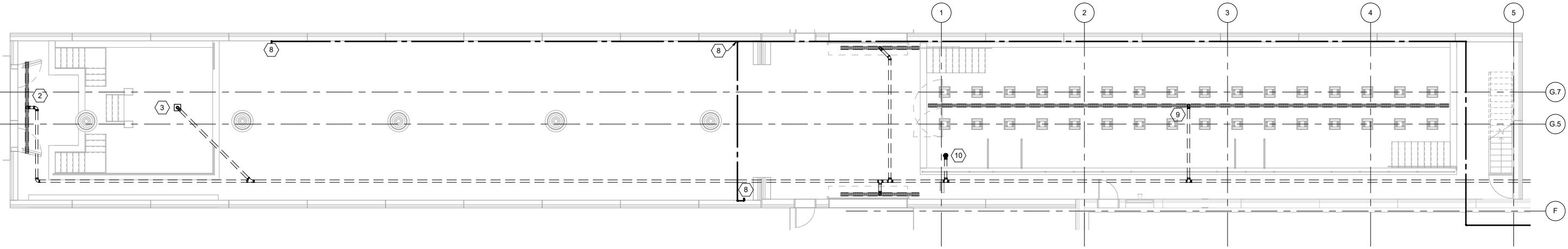
RideKC STREETCAR

PLOT DATE: 8/26/2019 1:31:32 PM

NOT FOR CONSTRUCTION

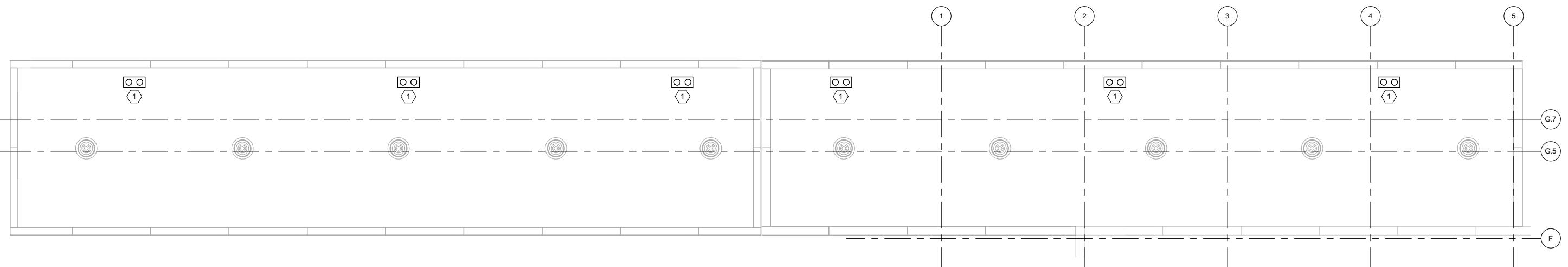
FDR

10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856



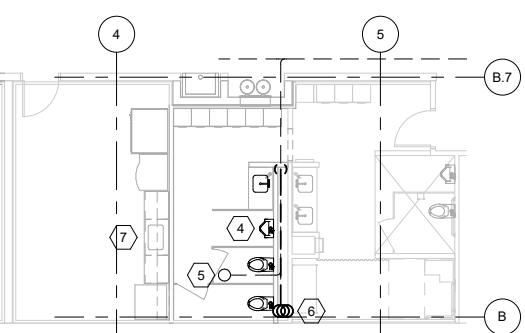
VMF EXPANSION LEVEL 1 PLUMBING PLAN

1/8" = 1'-0"



VMF EXPANSION LOW ROOF PLUMBING PLAN

1/8" = 1'-0"



VMF RENOVATION LEVEL 1 PLUMBING PLAN

1/8" = 1'-0"

GENERAL NOTES - VMF LVEL 1 PLUMBING

A PLUMBING PIPING AND EQUIPMENT IS NOT SIZED FOR THE 30% SET. SIZES TO BE FINALIZED DURING DETAILED DESIGN

KEYNOTES

- 1 ROOFDRAIN & OVERFLOW DRAINS. ROUTE RD AND OD DRAIN PIPING SYSTEMS INDEPENDENTLY. STORM PIPING FROM ROOF DRAIN SHALL BE COMBINED TO EXIT THE EXPANSION AT A SINGLE LOCATION. OVERFLOW DRAIN PIPING TO COMBINE WHERE BENEFICIAL AND TERMINATE AT RESPECTIVE DOWNSPOUTS.
- 2 PROVIDE TRENCH DRAIN AT VEHICLE ENTRANCE AND OVERHEAD DOOR LOCATIONS.
- 3 PROVIDE FLOOR SINK IN WHEEL TRUING PIT.
- 4 NEW WATER CLOSETS, URINALS & LAVATORIES, AND ASSOCIATED TRIM IN RESTROOM EXPANSION TO MATCH EXISTING.
- 5 PROVIDE NEW FLOOR DRAIN IN RESTROOM EXPANSION.
- 6 NEW CW PIPING BRANCH FROM 2" MAIN ON LEVEL 2 TO SERVE NEW FIXTURES. EXISTING 1-1/2" CW BRANCH ON LEVEL 1 HAS NO ADDITIONAL CAPACITY.

KEYNOTES

- 7 EXTEND CW, HW, SAN, & V PIPING TO RELOCATED BREAK ROOM SINK. INSTALL EXISTING GARBAGE DISPOSAL AT REVISED SINK LOCATION. EXTEND CW PIPING TO RELOCATED REFRIGERATOR.
- 8 3/4" CW DOWN TO HOSE BIB.
- 9 PROVIDE TRENCH DRAIN IN S&I BAY PIT
- 10 PROVIDE FLOOR DRAIN UNDER LIFT TABLE

0 4.00' 8.00' 16.00'



REV	DATE	DESCRIPTION	DESIGNED BY	JTG
	08/27/19	30% DESIGN SUBMITTAL	CHECKED BY	NHM
			DRAWN BY	RJB
			CHECKED BY	NHM
			APPROVED BY	NHM
			DATE:	08/27/19



PRELIMINARY PLANS - 30%		DATE: 08-27-2019
	10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	
NOT FOR CONSTRUCTION		

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
RENOVATION & EXPANSION PLUMBING PLANS

SCALE FOR 22"x34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	P101
SHEET NO.:	56

GENERAL DEMO NOTES

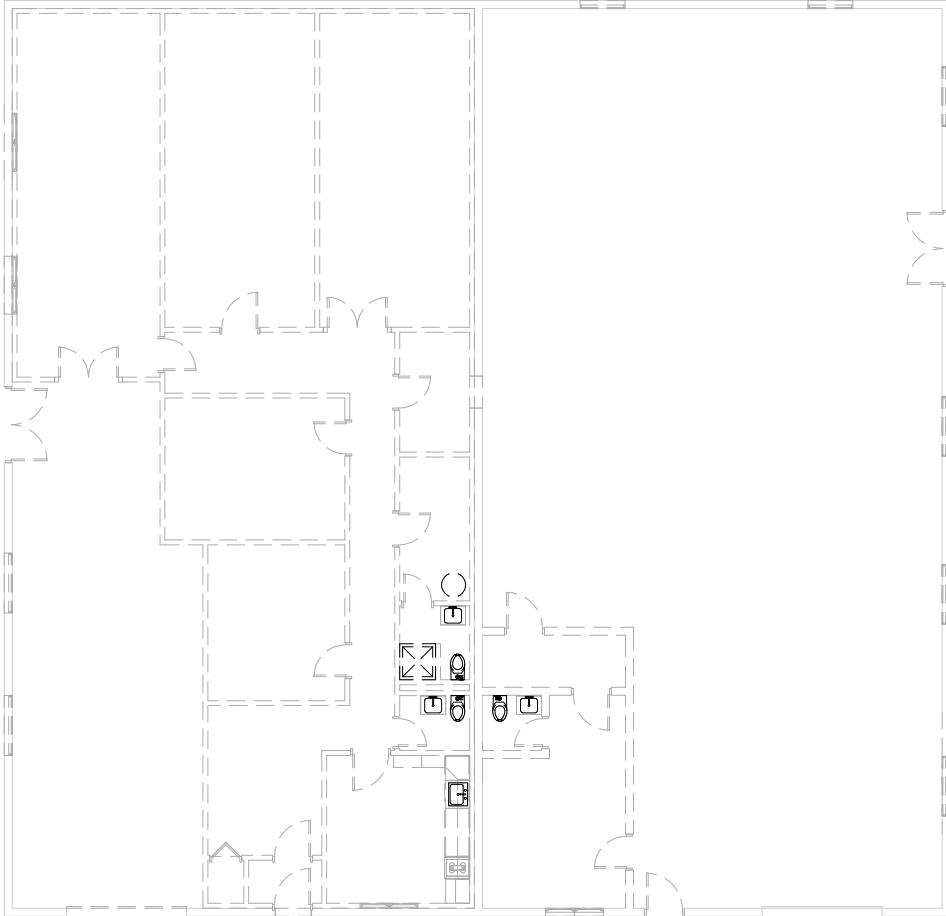
A DEMO ALL EXISTING PLUMBING FIXTURES INCLUDING BUT NOT LIMITED TO: HOT WATER HEATER, MOP BASIN, WATER CLOSETS, LAVATORY SINKS, SHOWER, SERVICE SINK, BREAK ROOM SINK, AND ALL ASSOCIATED DCW, DHW, AND VENT PIPING. SAWCUT AS REQUIRED TO REMOVE UG SANITARY PIPING TO 5FT OUTSIDE BUILDING AND CAP FOR FUTURE RECONNECTION. DCW MAIN SHALL BE REMOVED UP TO AND INCLUDING BUILDING BACKFLOW PREVENTER AND CAPPED AND MAINTAINED FOR NEW CONNECTION.

KEYNOTES

1 INSTANTANEOUS POINT OF USE ELECTRIC WATER HEATER.
2 PROVIDE NEW FLOOR DRAIN IN EACH RESTROOM.

GENERAL NOTES - WAREHOUSE PLUMBING

A NEW UG SANITARY PIPING SHALL BE PROVIDED TO SERVE THE BATHROOM GROUPS AND BREAK ROOM. NEW TO EXISTING CONNECTION SHALL BE 5FT OUTSIDE THE BUILDING.
B ROUTE CONDENSATE DRAINS FROM EACH VRF FAN COIL UNIT TO TAILPIECE OF NEAREST SINK OR LAVATORY.

WAREHOUSE - PLUMBING DEMOLITION PLAN

1/8" = 1'-0"

WAREHOUSE - RENOVATION PLUMBING PLAN

1/8" = 1'-0"

0 4.00' 8.00' 16.00'



REV	DATE	DESCRIPTION
	08/27/19	30% DESIGN SUBMITTAL
		DESIGNED BY JTG
		CHECKED BY NHM
		DRAWN BY RJB
		CHECKED BY NHM
		APPROVED BY NHM
		DATE: 08/27/19



PLOT DATE: 8/26/2019 1:31:35 PM

PRELIMINARY PLANS - 30%	DATE: 08-27-2019
NOT FOR CONSTRUCTION	

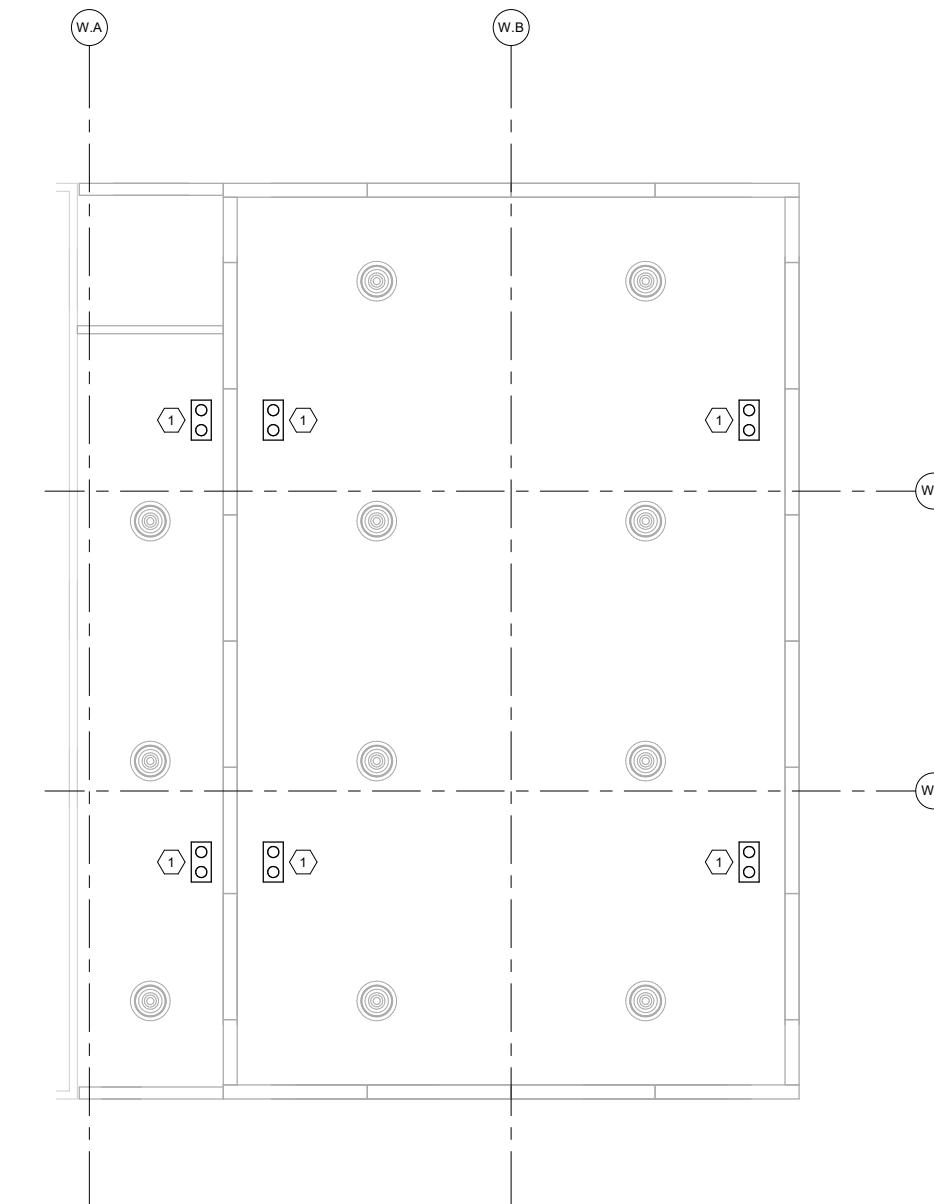
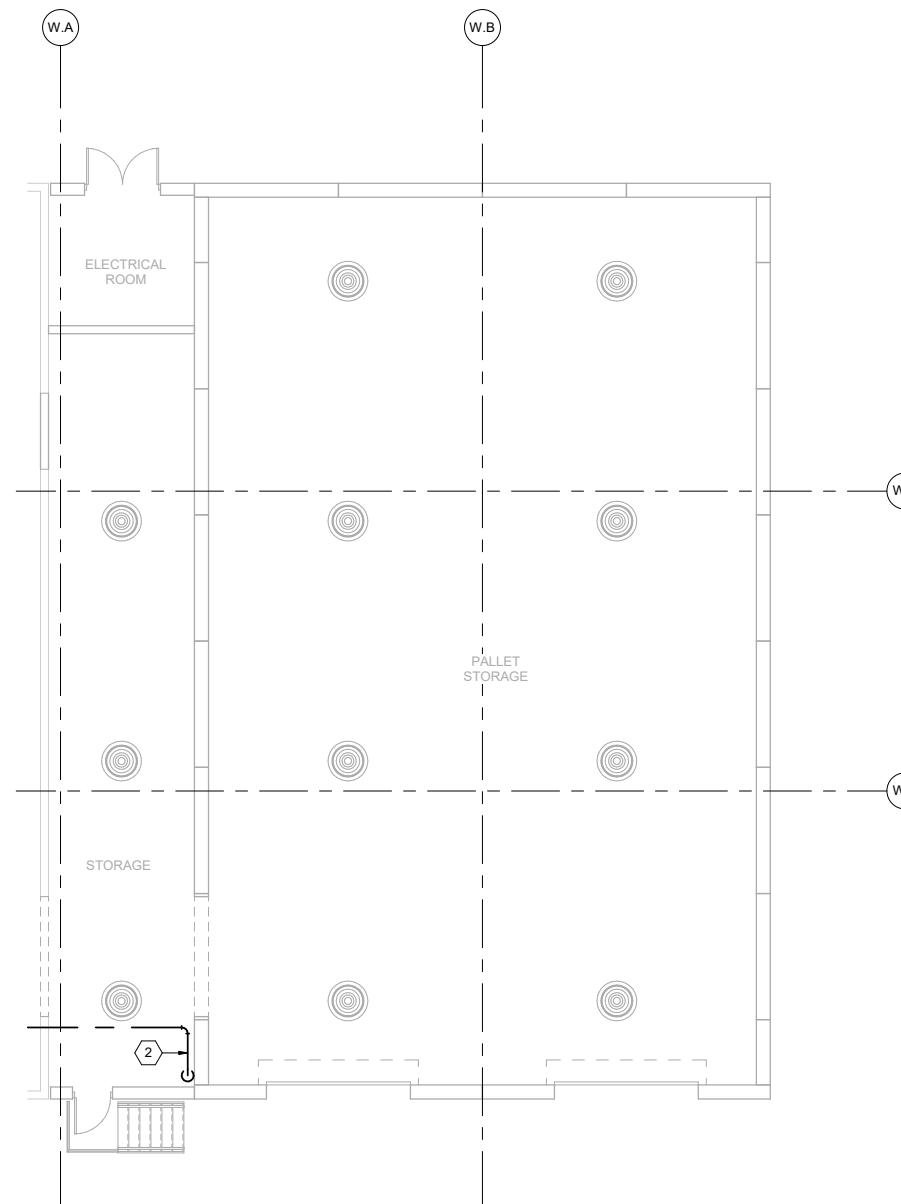
KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
DEMOLITION & RENOVATION PLUMBING PLAN
WAREHOUSE

SCALE FOR 22"x34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	P102
SHEET NO.:	57

KEYNOTES

1 ROOFDRAIN & OVERFLOW DRAINS. ROUTE RD AND OD DRAIN PIPING SYSTEMS INDEPENDENTLY. STORM PIPING FROM ROOF DRAIN SHALL BE COMBINED TO EXIT THE EXPANSION AT A SINGLE LOCATION. OVERFLOW DRAIN PIPING TO COMBINE WHERE BENEFICIAL AND TERMINATE AT RESPECTIVE DOWNSPOUTS.

2 NEW DOMESTIC WATER ENTRY AND BACKFLOW PREVENTOR.



0 4.00' 8.00' 16.00'



REV	DATE	DESCRIPTION
08/27/19		30% DESIGN SUBMITTAL
		DESIGNED BY JTG
		CHECKED BY NHM
		DRAWN BY RJB
		CHECKED BY NHM
		APPROVED BY NHM
		DATE: 08/27/19

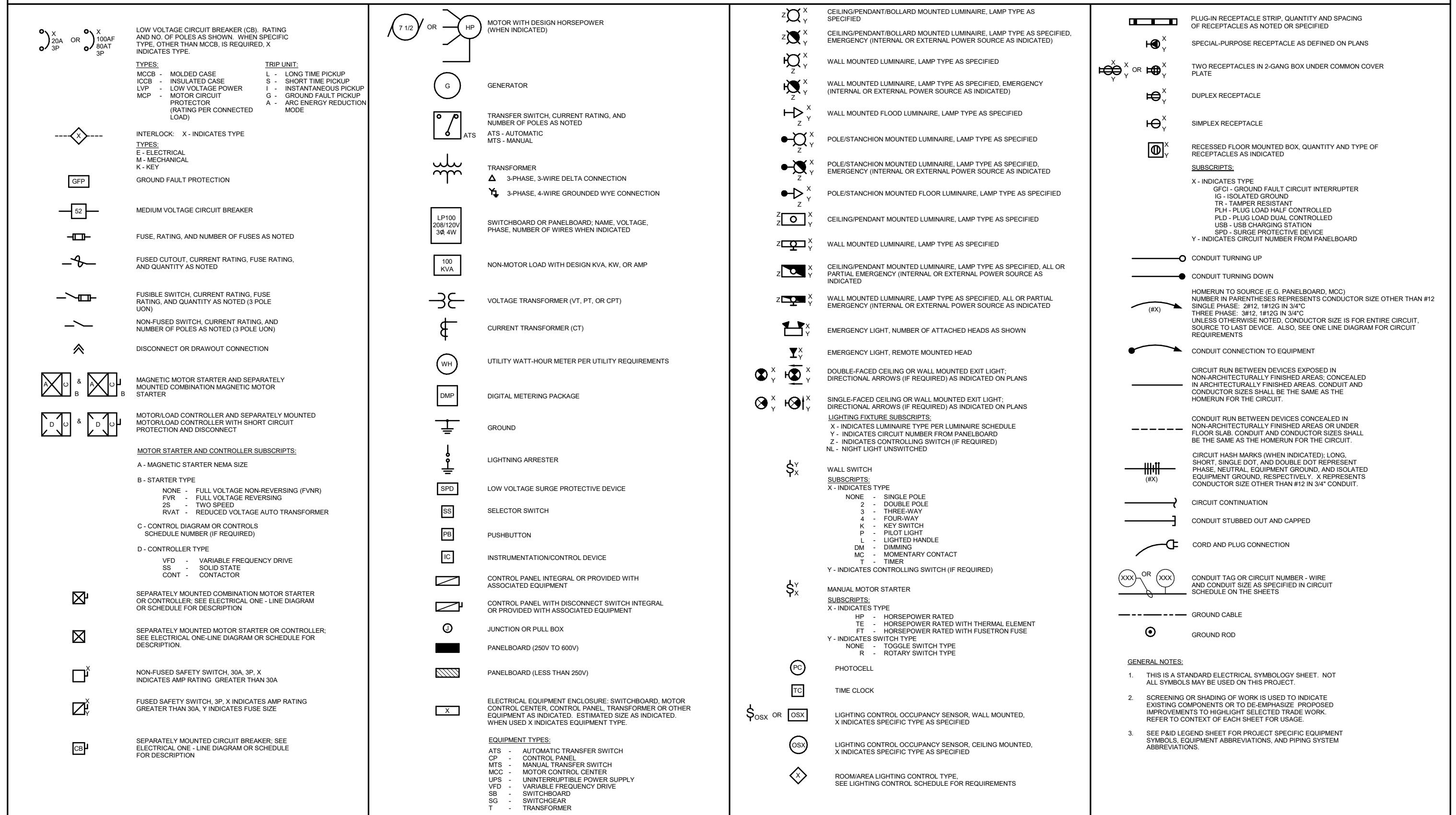


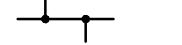
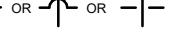
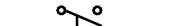
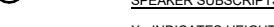
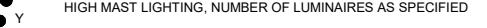
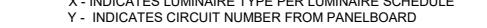
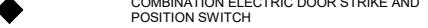
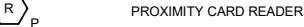
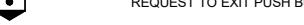
PRELIMINARY PLANS - 30%	DATE: 08-27-2019
 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	
NOT FOR CONSTRUCTION	

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EXPANSION PLUMBING PLAN
WAREHOUSE

SCALE FOR 22"x34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	P103
SHEET NO.:	58

ONE-LINE, POWER, AND LIGHTING SYMBOLOGY



COMMUNICATION SYMOLOGY	EMERGENCY ALARM SYMOLOGY	CONTROL SYMOLOGY	CONTROL SYMOLOGY
 WALL MOUNTED TELEPHONE OUTLET  WALL MOUNTED DATA OUTLET  WALL MOUNTED COMBINATION TELEPHONE AND DATA OUTLET  RECESSED FLOOR MOUNTED TELEPHONE OUTLET  RECESSED FLOOR MOUNTED DATA OUTLET  RECESSED FLOOR MOUNTED COMBINATION TELEPHONE AND DATA OUTLET	 ALARM BELL  ALARM HORN  ALARM FLASHING LIGHT  ALARM BELL AND FLASHING LIGHT COMBINATION UNIT  ALARM HORN AND FLASHING LIGHT COMBINATION UNIT  PUSHBUTTON OR PULLSTATION	 ELECTRICAL CONNECTION  NO ELECTRICAL CONNECTION  SOLENOID VALVE  CONTROL/RELAY COIL: X-INDICATES TYPE Y-INDICATES LOOP NUMBER, WHEN USED  TYPES: CR-CONTROL RELAY PC-PHOTOCELL DP-DEFINITE PURPOSE M-MOTOR STARTER TC-TIME CLOCK LC-LIGHTING CONTACTOR TR-TIMING RELAY  NORMALLY OPEN CONTACT (N.O.)  NORMALLY CLOSED CONTACT (N.C.)  NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS ENERGIZED  NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS ENERGIZED  NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS DE-ENERGIZED  NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS DE-ENERGIZED  NORMALLY OPEN TEMPERATURE SWITCH; CLOSE ON RISING TEMPERATURE  NORMALLY CLOSED TEMPERATURE SWITCH; OPEN ON RISING TEMPERATURE  NORMALLY OPEN FLOW SWITCH; CLOSE ON INCREASING FLOW  NORMALLY CLOSED FLOW SWITCH; OPEN ON INCREASING FLOW  NORMALLY OPEN LEVEL SWITCH, CLOSE ON RISING LEVEL  NORMALLY CLOSED LEVEL SWITCH, OPEN ON RISING LEVEL  NORMALLY OPEN PRESSURE SWITCH, CLOSE ON INCREASING PRESSURE  NORMALLY CLOSED PRESSURE SWITCH, OPEN ON INCREASING PRESSURE  NORMALLY OPEN LIMIT SWITCH, CLOSE ON REACHING LIMIT  NORMALLY CLOSED LIMIT SWITCH, OPEN ON REACHING LIMIT  MICROPROCESSOR (PLC, RTU, ETC.) OUTPUT  MICROPROCESSOR (PLC, RTU, ETC.) INPUT  FIELD WIRING EXTERNAL TO CONTROL PANEL  3 POSITION SELECTOR SWITCH, MAINTAINED CONTACTS; UNLESS OTHERWISE NOTED, 2-POSITION SIMILAR  NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED  NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED	 INDICATING LIGHT: X INDICATES LENS COLOR  PUSH TO TEST INDICATING LIGHT: X INDICATES LENS COLOR  LENS COLORS: R - RED G - GREEN B - BLUE Y - YELLOW W - WHITE A - AMBER  THERMAL OVERLOAD ELEMENT  THERMAL OVERLOAD RELAY CONTACT. WHEN SHOWN X INDICATES QUANTITY.  CONTROL POWER TRANSFORMER (CPT)  RUN TIME METER
AUDIO/VISUAL SYMOLOGY	SITE SYMOLOGY		
 TELEVISION OUTLET  CEILING MOUNT SPEAKER  WALL MOUNT SPEAKER  SPEAKER SUBSCRIPTS: X - INDICATES HEIGHT  HORN TYPE TRANSDUCER  VOLUME CONTROL  HEAD END EQUIPMENT  FLOOR MOUNTED MICROPHONE JACK  WALL MOUNTED MICROPHONE JACK	 EXTERIOR PAD MOUNTED TRANSFORMER  POLE - MOUNTED TRANSFORMER  ELECTRICAL HANDHOLE OR MANHOLE  Y- MHX OR HHX  X - INDICATES SEQUENCE NUMBER  POLE/STANCHION MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED  POLE MOUNTED AREA OR ROADWAY LUMINAIRE, LAMP TYPE AS SPECIFIED  HIGH MAST LIGHTING, NUMBER OF LUMINAIRES AS SPECIFIED  LIGHTING FIXTURE SUBSCRIPTS: X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD  POWER POLE  DOWNGUY  UNDERGROUND (UNO) ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY  OVERHEAD ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY		
SECURITY SYMOLOGY			
 DOOR POSITION SWITCH  COMBINATION ELECTRIC DOOR STRIKE AND POSITION SWITCH  PROXIMITY CARD READER  PROXIMITY CARD READER WITH KEYPAD  DUAL TECHNOLOGY MOTION DETECTOR  REQUEST TO EXIT MOTION DETECTOR  REQUEST TO EXIT PUSH BUTTON  GLASS BREAK DETECTOR  CCTV CAMERA PAN/TILT/ZOOM WHEN INDICATED  SECURITY EQUIPMENT CABINET  REMOTE KEYPAD/CONTROL STATION			



The logo consists of the word "PRELIM" in a bold, sans-serif font above a large, stylized "HDR" monogram. Below the monogram, the address "10450 Holmes Road" is followed by "Suite 600", "Kansas City, MO 64156", and the phone number "816-360-2700". A "Certificate of Authorization" is also mentioned.

PRELIMINARY PLANS - 301

HDR

10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

NOT FOR

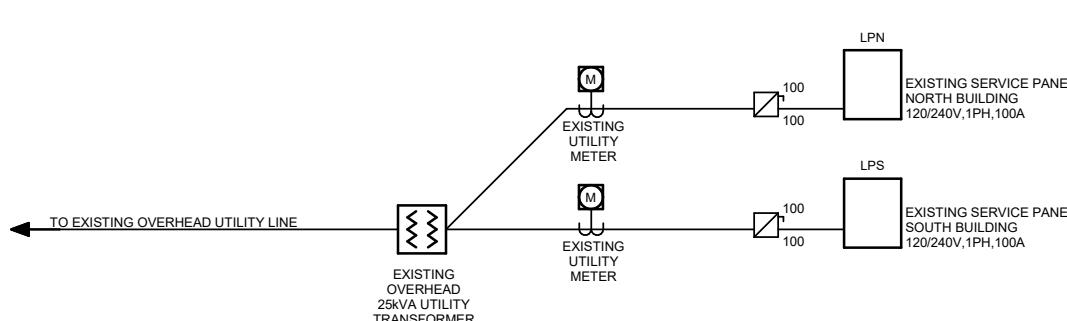
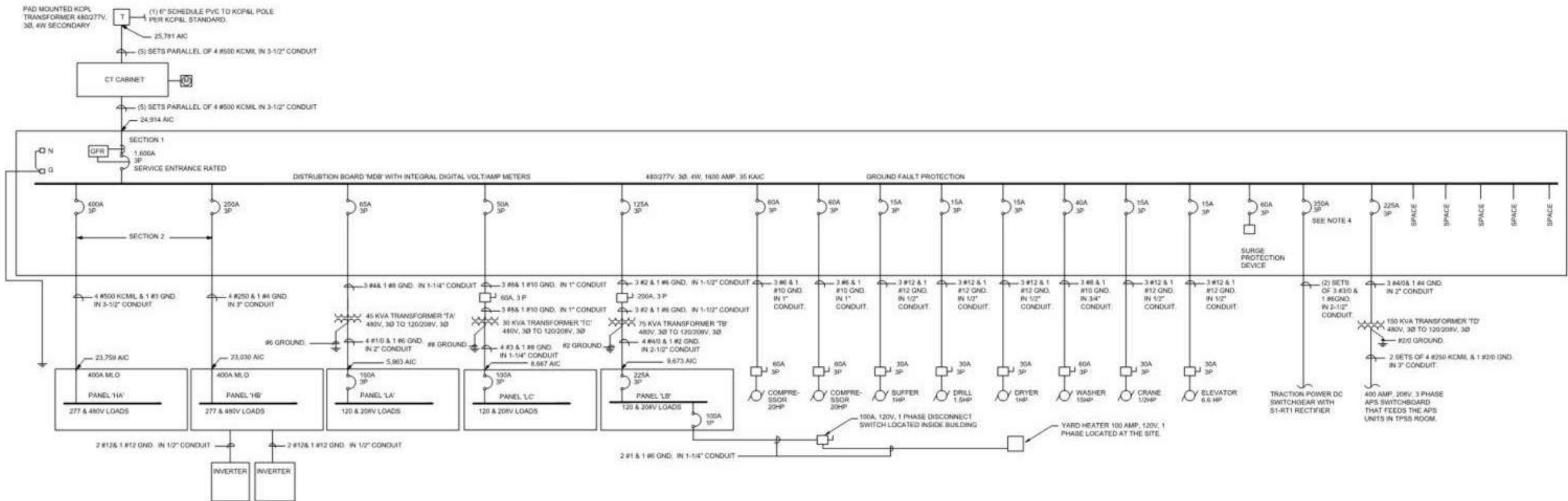
DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION

VEHICLE MAINTENANCE FACILITY

ELECTRICAL LEGEND

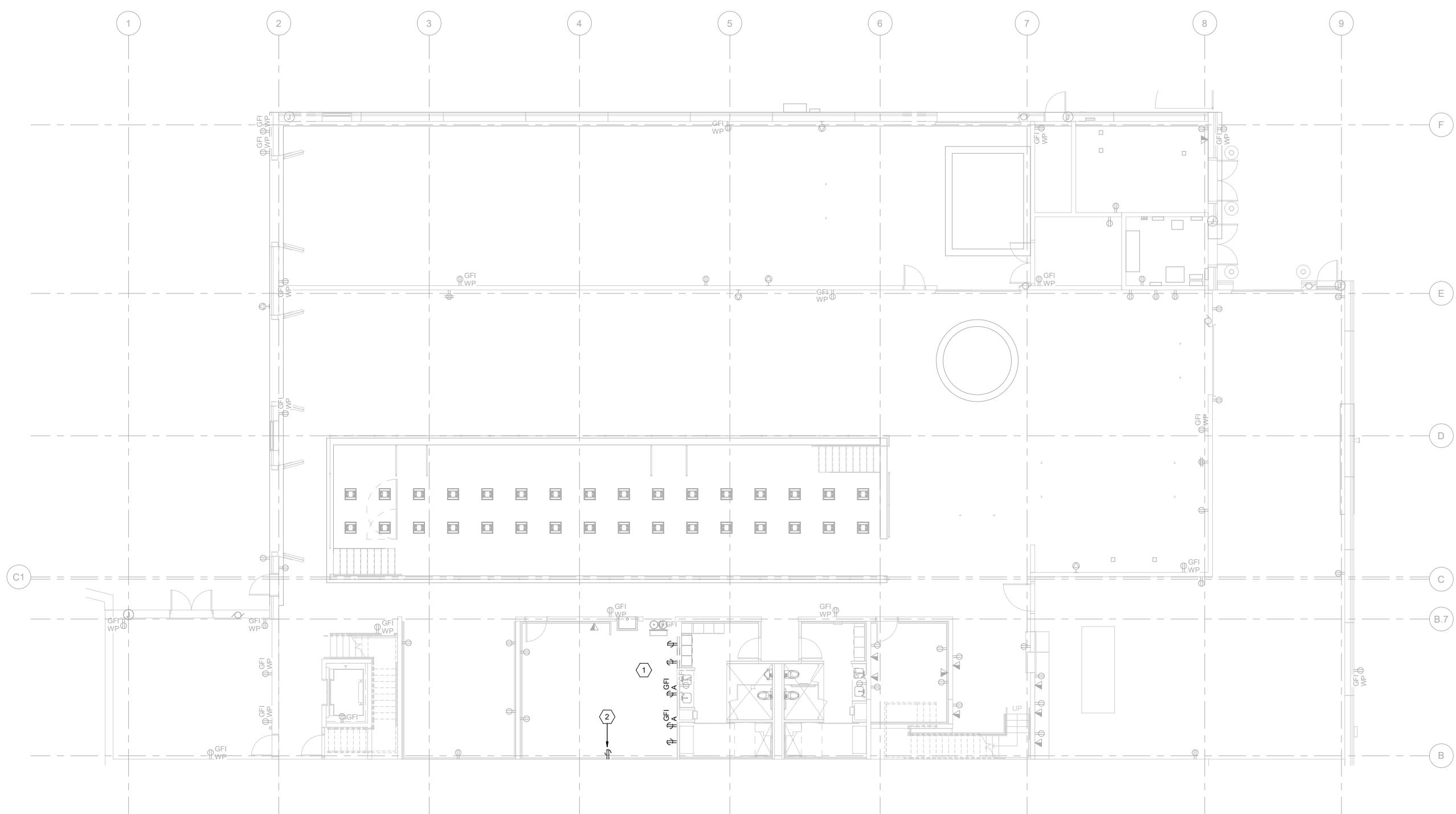
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2" x 10"	
LENAME:	
CONTRACT NO.:	
1147326	
OLUME:	
DRAWING NO.:	SHEET NO.:
E001	60



REV	DATE	DESCRIPTION	DESIGNED BY	LPD	RideKC STREETCAR	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22"x34": 12" = 1'-0"
			CHECKED BY	Checker					FILENAME:
			DRAWN BY	LPD					CONTRACT NO.:
			CHECKED BY	Checker					10147326
			APPROVED BY	Approver					VOLUME:
			DATE:	8/27/19					DRAWING NO.: E002
									SHEET NO.: 61

PLOT DATE: 8/27/2019 3:44:10 PM

NOT FOR CONSTRUCTION



ELECTRICAL DEMO POWER & SYSTEMS PLAN LEVEL 1

1/8" = 1'-0"

REV	DATE	DESCRIPTION
		DESIGNED BY LPD
		CHECKED BY Checker
		DRAWN BY LPD
		CHECKED BY Checker
		APPROVED BY Approver
		DATE: 8/27/19

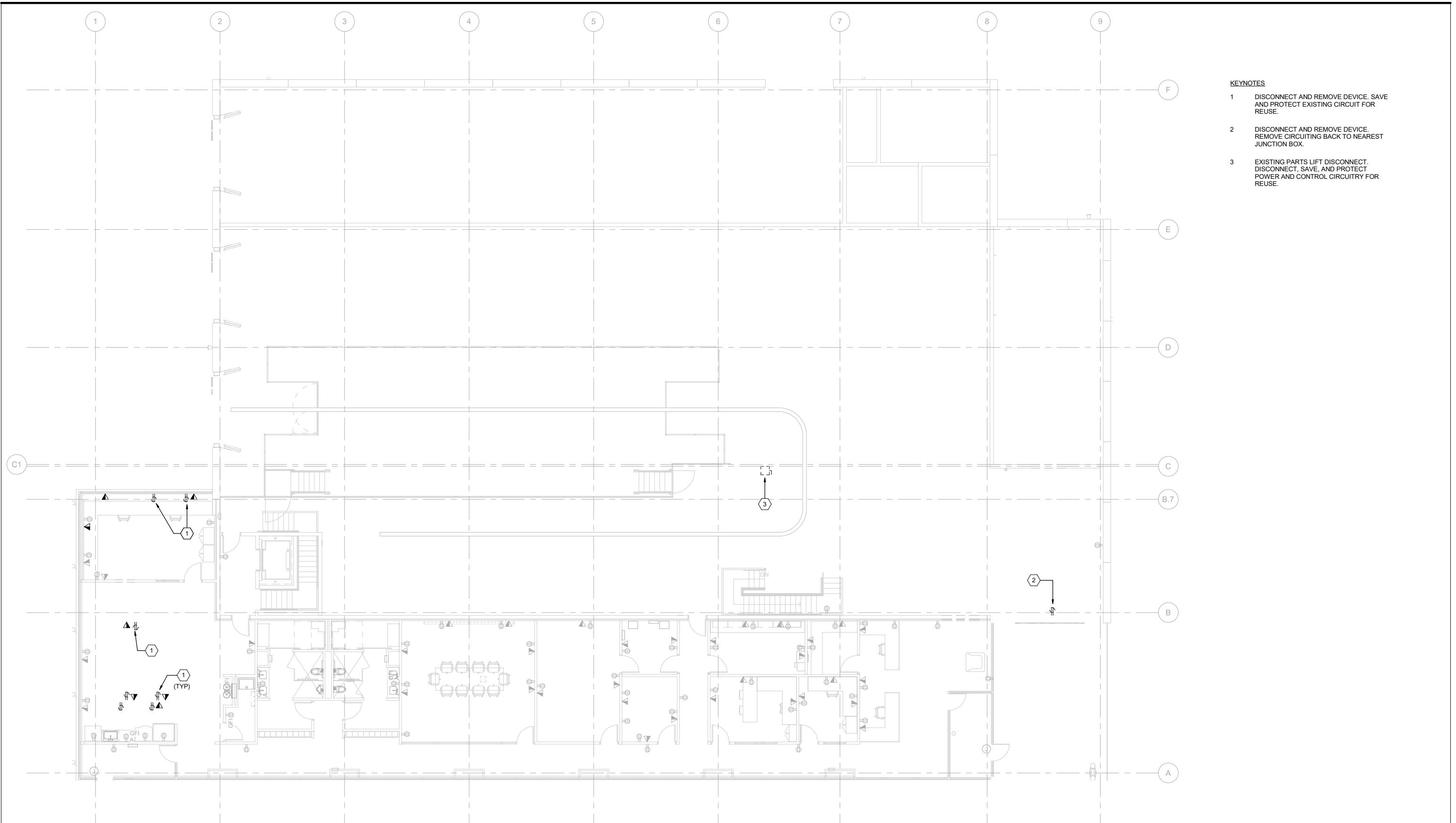


PRELIMINARY PLANS - 30%		DATE: 08-27-2019
	10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	

NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL DEMO POWER AND SYSTEMS PLAN
LEVEL 1

SCALE FOR 22" x 34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: ED001
SHEET NO.: 62



ELECTRICAL DEMO POWER & SYSTEMS PLAN LEVEL 2

1/8" = 1'-0"

REV	DATE	DESCRIPTION
		DESIGNED BY LPD
		CHECKED BY Checker
		DRAWN BY LPD
		CHECKED BY Checker
		APPROVED BY Approver
		DATE: 8/27/19



10450 Holmes Road
Suite 600
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816-360-2700
Certificate of Authority: 000856

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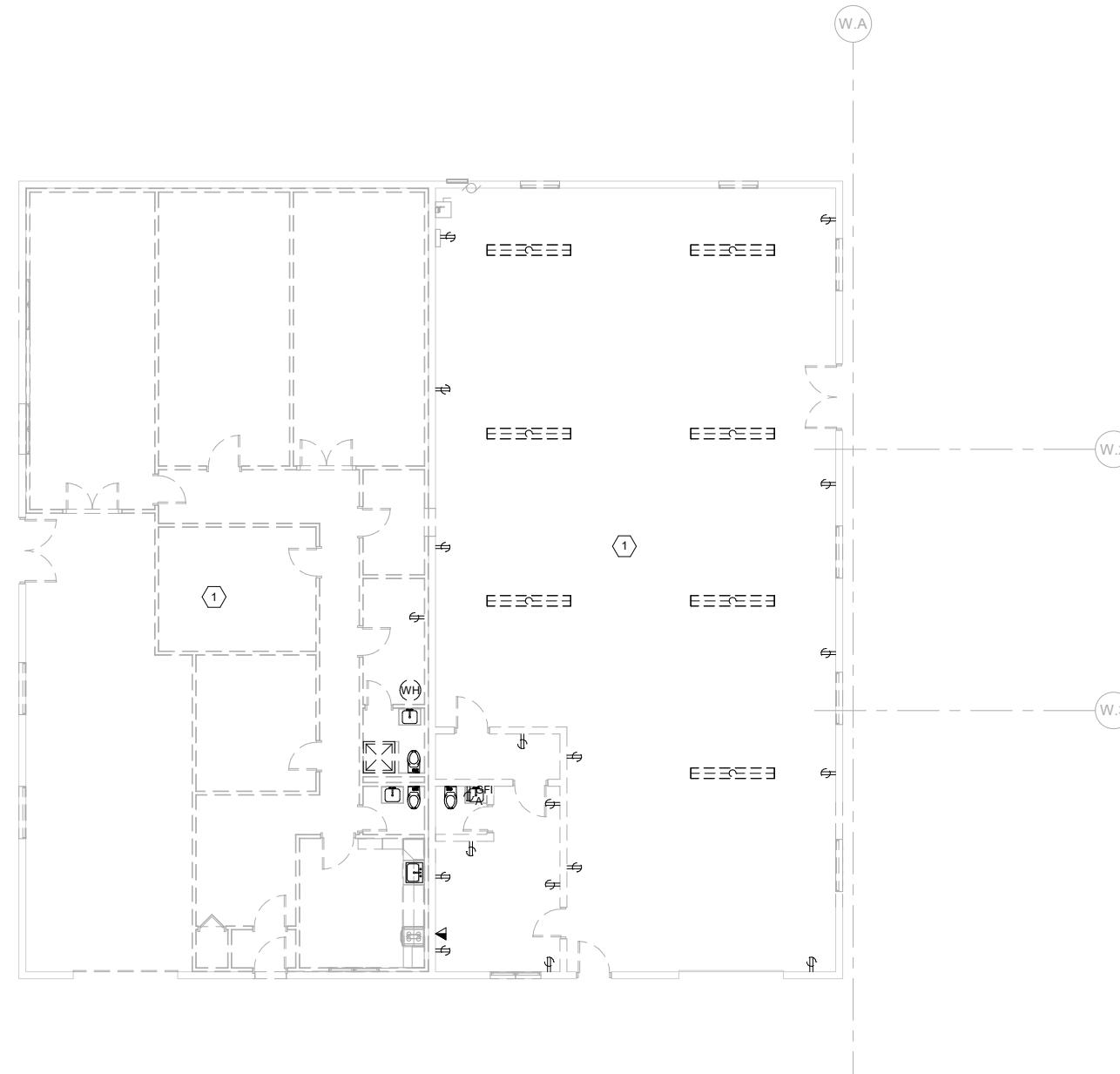
PRELIMINARY PLANS - 30%
DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL DEMO POWER AND SYSTEMS PLAN
LEVEL 2

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: ED002
SHEET NO.: 63

KEYNOTES

1 ALL RECEPTACLES, LIGHTS, LIGHTING CONTROLS, AND DATA OUTLETS TO BE REMOVED. DEMO CONDUIT AND CABLING BACK TO SOURCE.

**ELECTRICAL DEMO POWER AND SYSTEMS PLAN WAREHOUSE**

1/8" = 1'-0"

REV	DATE	DESCRIPTION
		DESIGNED BY LPD
		CHECKED BY Checker
		DRAWN BY LPD
		CHECKED BY Checker
		APPROVED BY Approver
		DATE: 8/27/19



PRELIMINARY PLANS - 30%	DATE: 08-27-2019
	10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856
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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL DEMO POWER AND SYSTEMS PLAN
WAREHOUSE

SCALE FOR 22" x 34":
 1/8" = 1'-0"
 FILENAME:
 CONTRACT NO.:
 10147326
 VOLUME:
 DRAWING NO.:
 ED011
 SHEET NO.:
 64



ELECTRICAL DEMO LIGHTING PLAN LEVEL 1

1/8" = 1'-0"

REV	DATE	DESCRIPTION	DESIGNED BY	LPD
			CHECKED BY	Checker
			DRAWN BY	LPD
			CHECKED BY	Checker
			APPROVED BY	Approver
			DATE:	8/27/19



PRELIMINARY PLANS - 30%

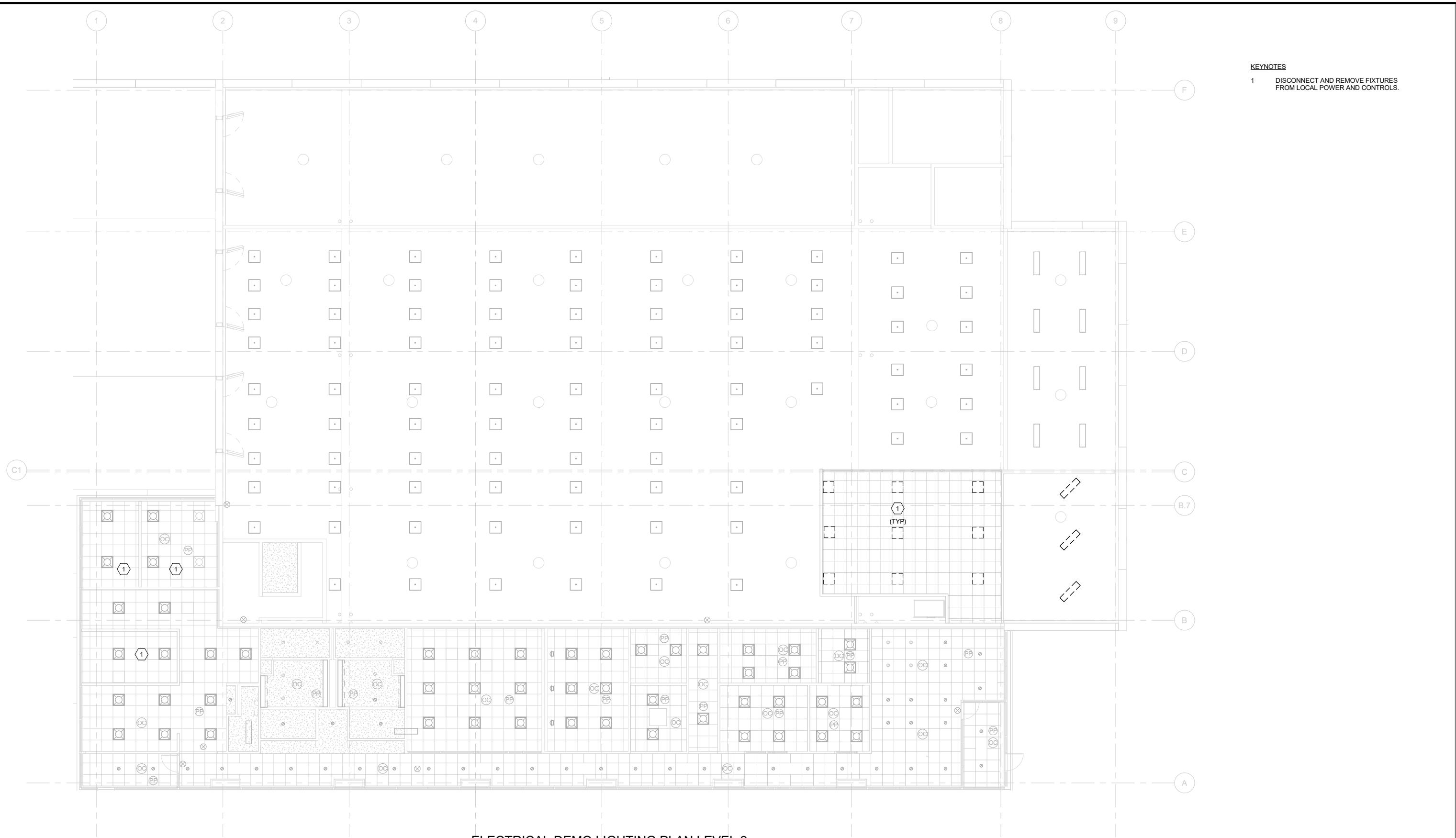
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

DATE: 08-27-2019

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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL DEMO LIGHTING PLAN
LEVEL 1

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.:
ED101
SHEET NO.:
65



REV	DATE	DESCRIPTION
		DESIGNED BY LPD
		CHECKED BY Checker
		DRAWN BY LPD
		CHECKED BY Checker
		APPROVED BY Approver
		DATE: 8/27/19

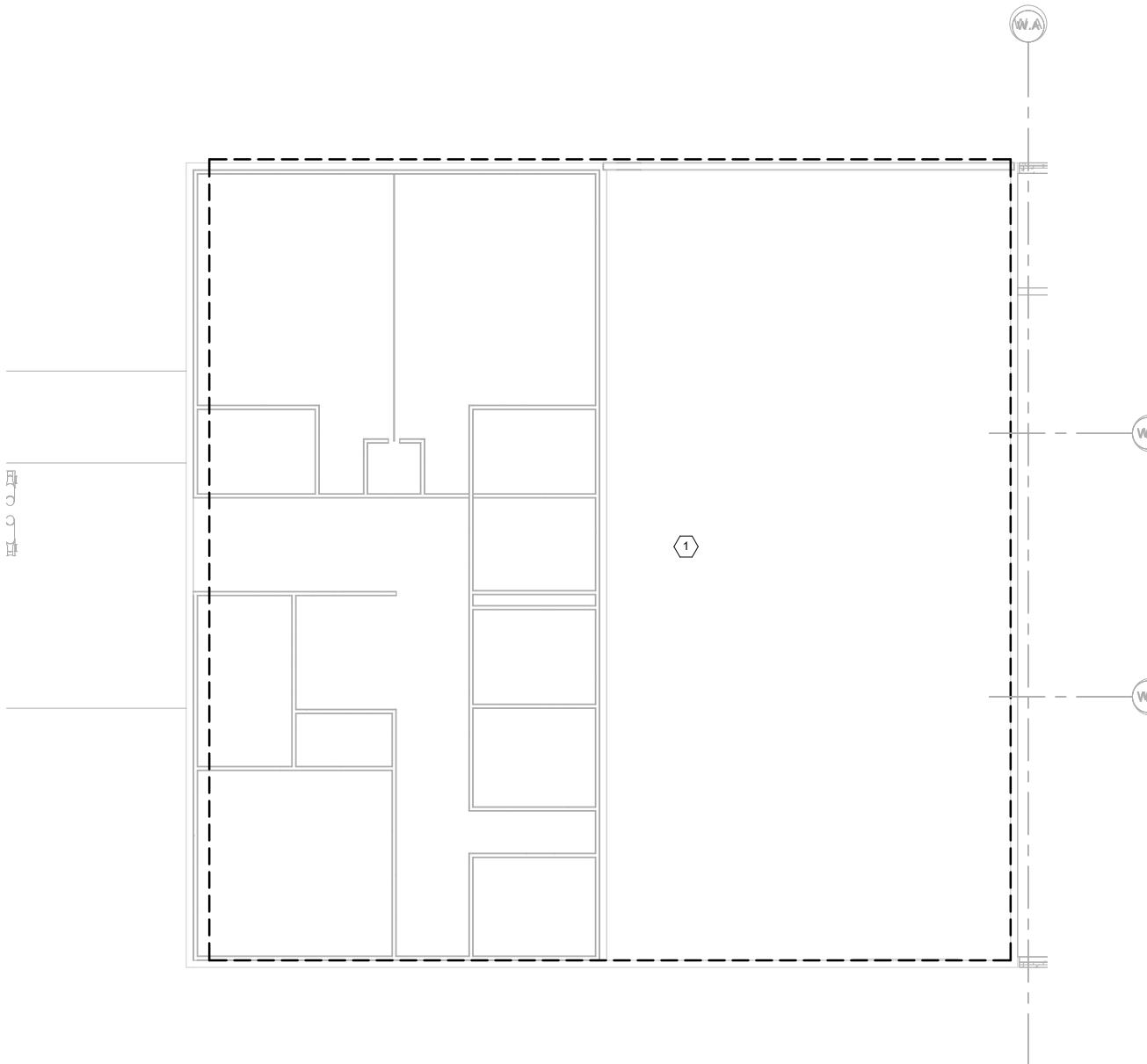


DATE: 08-27-2019

NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL DEMO LIGHTING PLAN
LEVEL 2

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: ED102
SHEET NO.: 66



KEYNOTES

1 EXISTING LIGHTING TO BE REMOVED.
LIGHTING LAYOUT AND CONTROLS TO BE
DETAILED IN FUTURE SETS AS DESIGN
BECOMES MORE DETAILED

ELECTRICAL DEMO LIGHTING PLAN WAREHOUSE

1/8" = 1'-0"

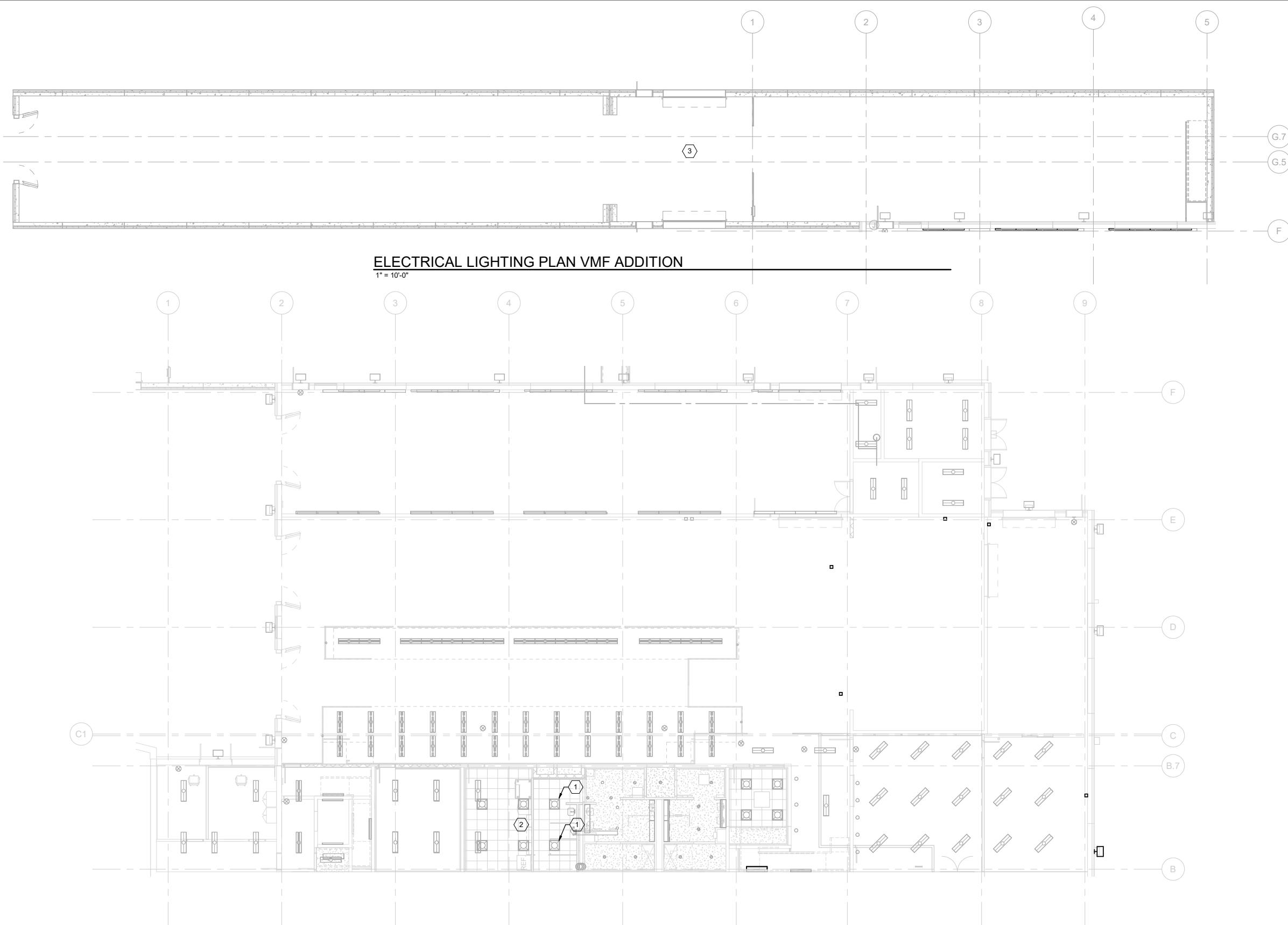
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			CHECKED BY	Checker
			DRAWN BY	LPD
			CHECKED BY	Checker
			APPROVED BY	Approver
			DATE:	8/27/19



PRELIMINARY PLANS - 30%		DATE: 08-27-2019
	10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	
NOT FOR CONSTRUCTION		

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL DEMO LIGHTING PLAN
WAREHOUSE

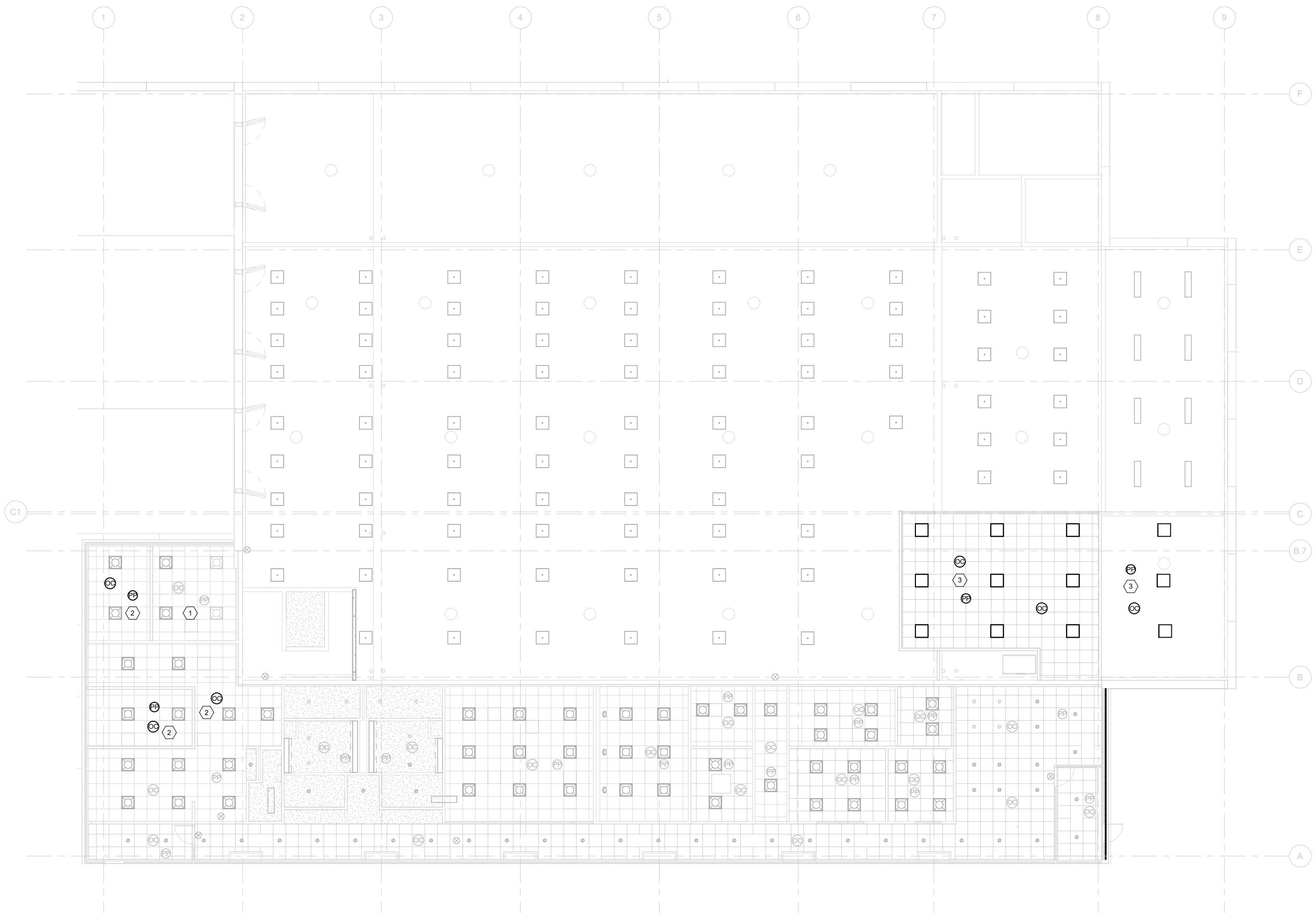
SCALE FOR 22"x34":	1/8" = 1'-0"
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CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	ED111
SHEET NO.:	67



ELECTRICAL LIGHTING PLAN LEVEL 1

1" = 10'-0"

REV	DATE	DESCRIPTION	DESIGNED BY	LPD	CHECKED BY	Checker	DRAWN BY	LPD	CHECKED BY	Checker	APPROVED BY	Approver	DATE:	PRELIMINARY PLANS - 30%	DATE: 08-27-2019	KANSAS CITY STREETCAR MAIN STREET EXTENSION	SCALE FOR 22"x34": 1" = 10'-0"
																VEHICLE MAINTENANCE FACILITY	FILENAME:
																ELECTRICAL LIGHTING PLAN	CONTRACT NO.:
																LEVEL 1	10147326
																VOLUME:	
																DRAWING NO.:	
																EL101	SHEET NO.:
																68	



ELECTRICAL LIGHTING PLAN LEVEL 2

1/8" = 1'-0"

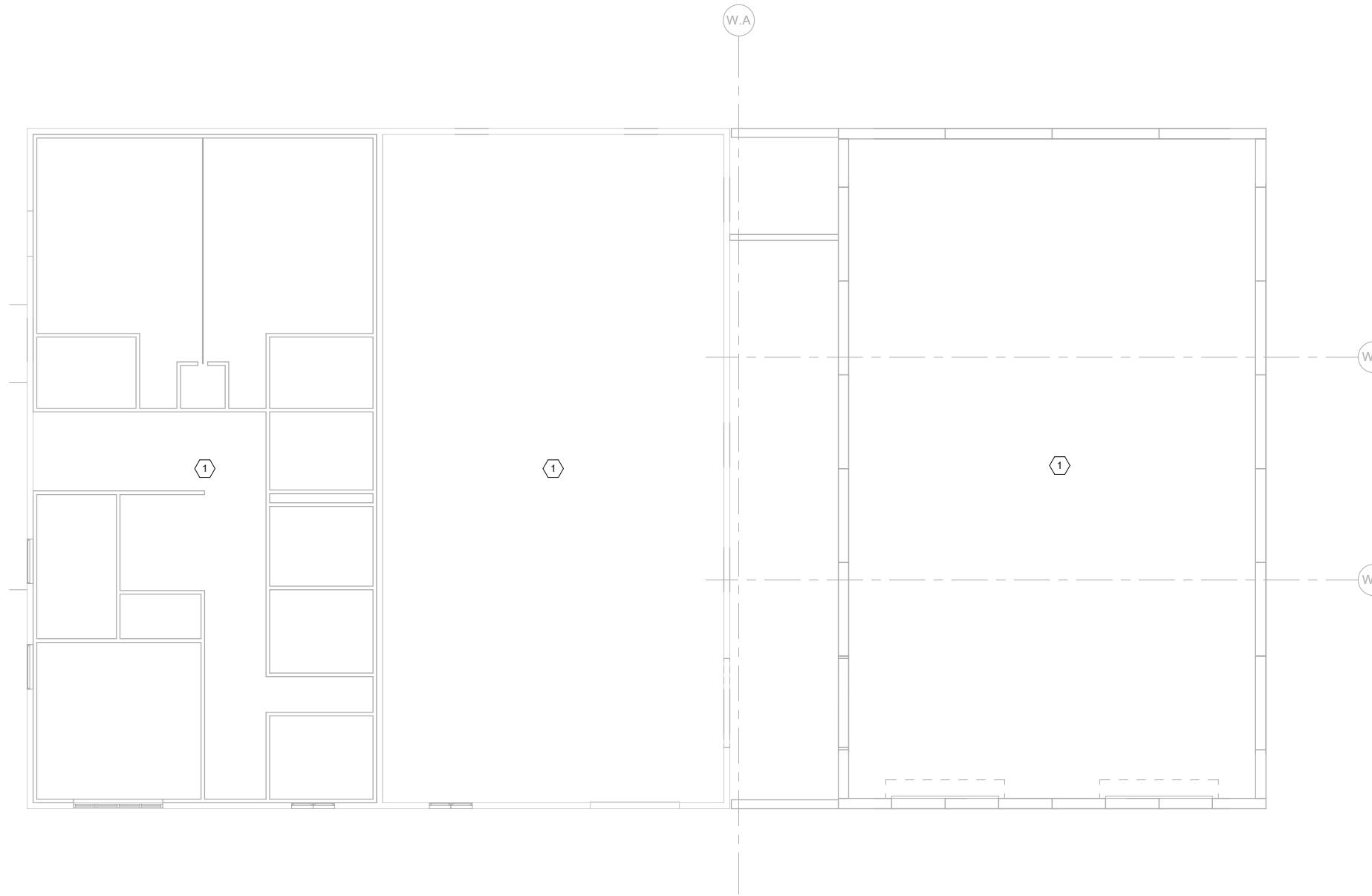


PRELIMINARY PLANS - 30%

DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL LIGHTING PLAN
LEVEL 2

CALE FOR 22"X34"	
8" = 1'-0"	
LENNAME:	
ONTRACT NO.:	
147326	
OLUME:	
RAWING NO.:	SHEET NO.:
EL102	69



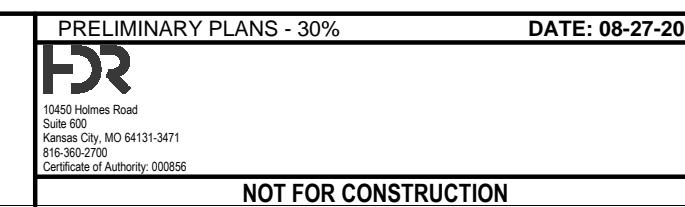
KEYNOTES

1 LIGHTING LAYOUT AND FIXTURE TYPE
TBD AS DESIGN IS MORE DETAILED.

ELECTRICAL LIGHTING PLAN WAREHOUSE

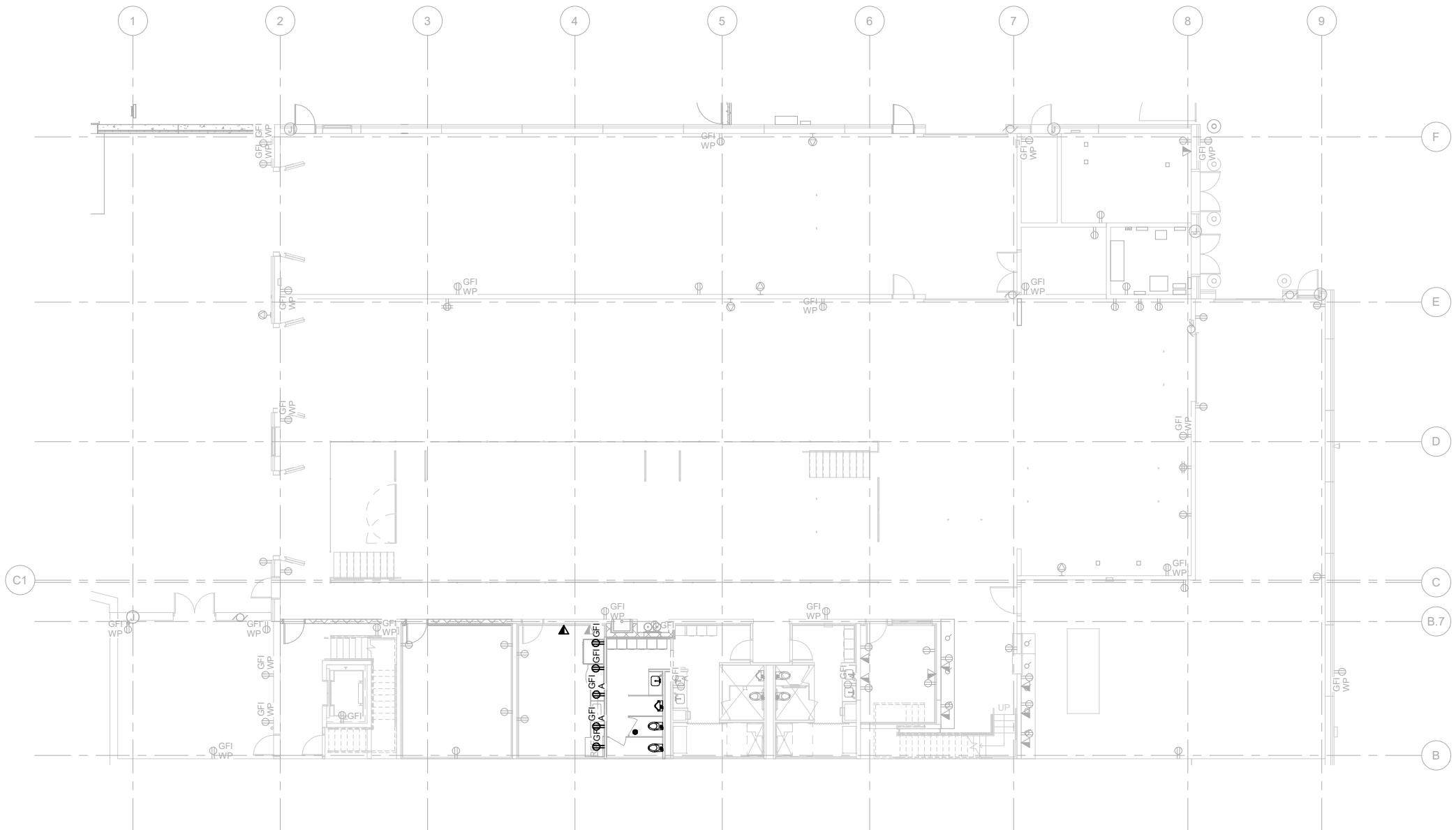
1/8" = 1'-0"

REV	DATE	DESCRIPTION	DESIGNED BY	LPD
			CHECKED BY	Checker
			DRAWN BY	LPD
			CHECKED BY	Checker
			APPROVED BY	Approver
			DATE:	8/27/19



KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL LIGHTING PLAN
WAREHOUSE

SCALE FOR 22" x 34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: SHEET NO.:
EL111 70



ELECTRICAL POWER & SYSTEMS PLAN LEVEL 1

1" = 10'-0"

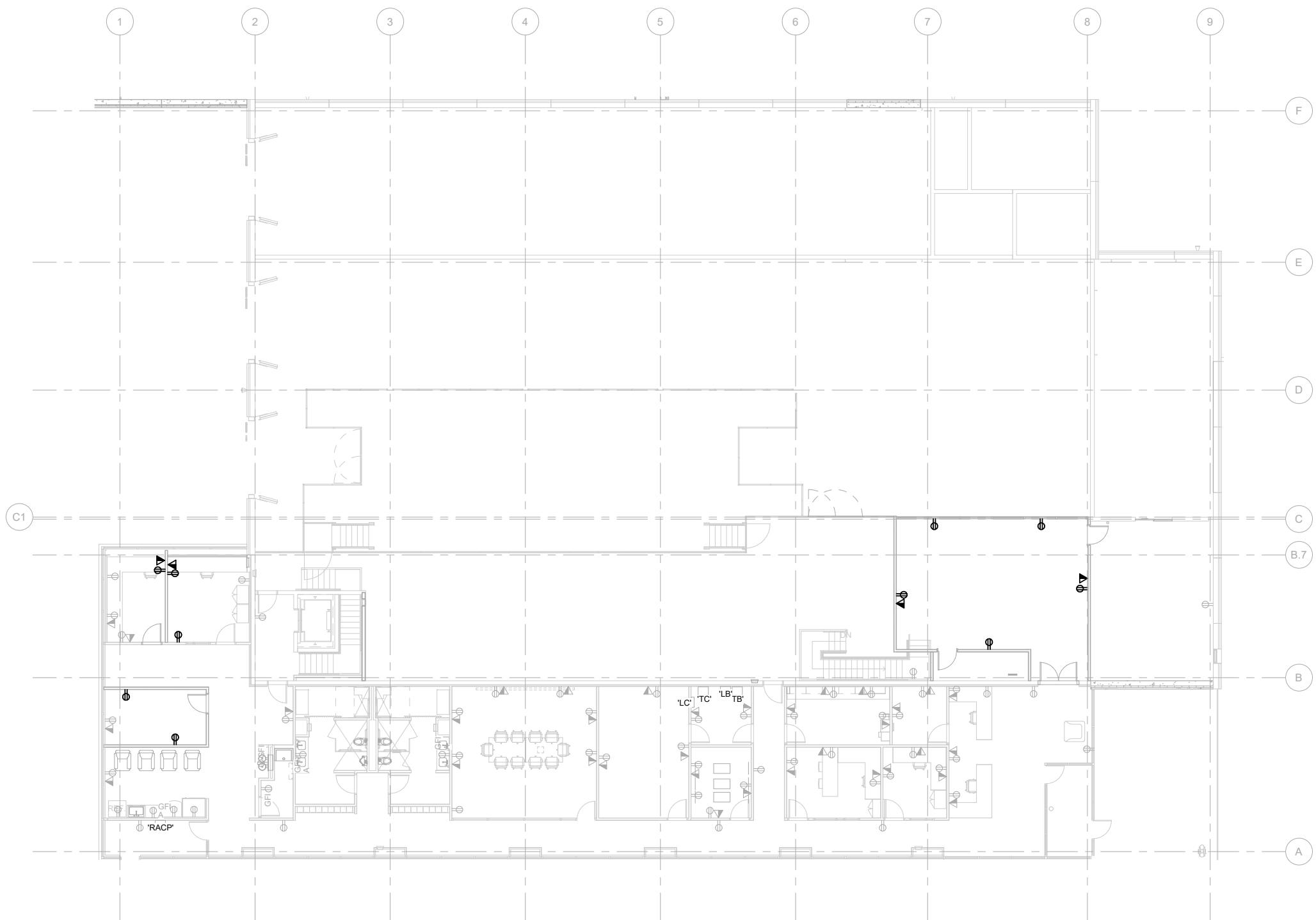
REV	DATE	DESCRIPTION
		DESIGNED BY LPD
		CHECKED BY Checker
		DRAWN BY LPD
		CHECKED BY Checker
		APPROVED BY Approver
		DATE: 8/27/19



PRELIMINARY PLANS - 30%	DATE: 08-27-2019
 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	
NOT FOR CONSTRUCTION	

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL POWER AND SYSTEMS PLAN
LEVEL 1

SCALE FOR 22" x 34":
1" = 10'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: EP001
SHEET NO.: 71



ELECTRICAL POWER & SYSTEMS PLAN LEVEL 2

1" = 10'-0"

REV	DATE	DESCRIPTION	DESIGNED BY	LPD
			CHECKED BY	Checker
			DRAWN BY	LPD
			CHECKED BY	Checker
			APPROVED BY	Approver
			DATE:	8/27/19



PRELIMINARY PLANS - 30%	DATE: 08-27-2019
 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	

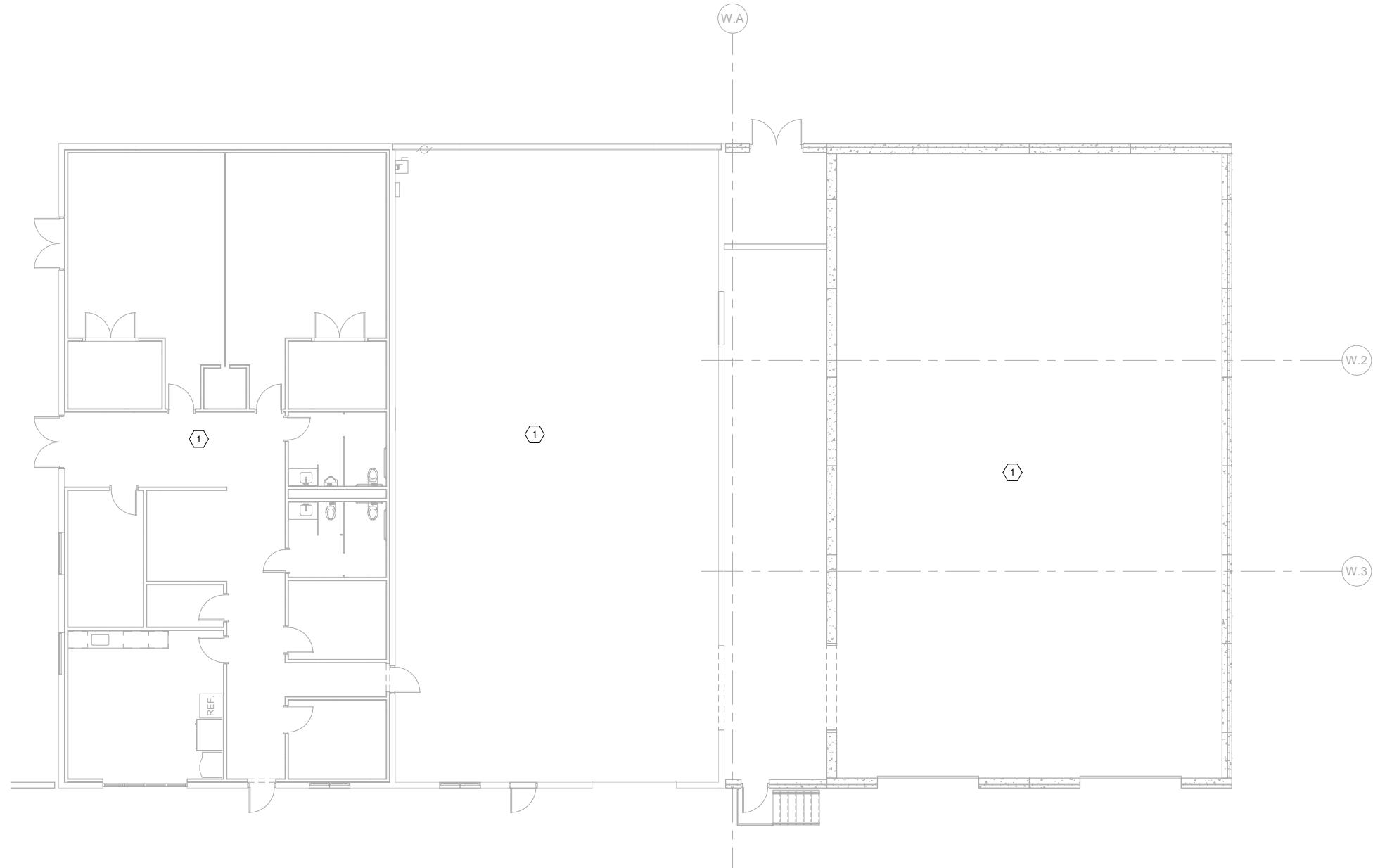
NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
 VEHICLE MAINTENANCE FACILITY
 ELECTRICAL POWER AND SYSTEMS PLAN
 LEVEL 2

SCALE FOR 22" x 34":
 1" = 10'-0"
 FILENAME:
 CONTRACT NO.:
 10147326
 VOLUME:
 DRAWING NO.:
 EP002
 SHEET NO.:
 72

KEYNOTES

1 RECEPTACLE LAYOUT, POWER EQUIPMENT LAYOUT, AND CIRCUITING TO BE FURTHER DETAILED AS COLLABORATION AND DESIGN PROGRESS.



REV	DATE	DESCRIPTION	DESIGNED BY	LPD
			CHECKED BY	Checker
			DRAWN BY	LPD
			CHECKED BY	Checker
			APPROVED BY	Approver
			DATE:	8/27/19



PRELIMINARY PLANS - 30%
DATE: 08-27-2019
10450 Holmes Road
Suite 600
Kansas City, MO 64131-3471
816-360-2700
Certificate of Authority: 000856

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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
ELECTRICAL POWER AND SYSTEMS PLAN
WAREHOUSE

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.:
EP003
SHEET NO.:
73

CF/CI EQUIPMENT SCHEDULE

EQ ID #	DESCRIPTION	SPEC SECTION
1456	RACK, BULK STORAGE, SIX FOOT	10 56 00
1540	RACK, PALLET, TWELVE FOOT, THREE TIER	10 56 00
1860	WORKBENCH, SEVERE USE, SIX FOOT	45 39 00
2835	VICE, FIVE INCH	11 11 29
2980	MACHINE, LATHE, WHEEL, UNDERFLOOR	11 11 29
5010	CRANE, BRIDGE, TOP RUNNING	41 22 00
5030	CRANE, BRIDGE, UNDERHUNG	41 22 00
5455	LIFT, TABLE, LLWA	11 11 29
5456	LIFT, TABLE, LLWA	11 11 29
5960	LIFT, COLUMN, PORTABLE, SCREWTYPE, RAIL	14 45 00
7540	PUMP, DIAPHRAGM, USED FLUID EVACUATION (UO)	11 11 00
7710	REEL, COMPRESSED AIR	11 11 00
7996	RECEIVER, 25 GALLON, PORTABLE (UO)	11 11 00

OF/OI EQUIPMENT SCHEDULE

EQ ID #	DESCRIPTION	SPEC SECTION
15351	RACK, PALLET, EIGHT FOOT, TWO TIER	OWNER

ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
ATF	AUTOMATIC TRANSMISSION FLUID (XXX)
CA	COMPRESSED AIR
CC	CONTROL CONSOLE
CF/CI	CONTRACTOR FURNISHED / CONTRACTOR INSTALLED
CFM	CUBIC FEET PER MINUTE
CG	CHASSIS GREASE
CL	CENTERLINE
CNG	COMPRESSED NATURAL GAS
D	DIESEL
DEF	DIESEL EXHAUST FLUID
EC	ENGINE COOLANT
EO1	ENGINE OIL (XXX)
EO2	ENGINE OIL (XXX)
EQ	EQUAL
EQ ID	EQUIPMENT IDENTIFIER
F/R	FILTER REGULATOR
FF	FINISH FLOOR
FMS	FLUID MANAGEMENT SYSTEM
FRL	FILTER, REGULATOR, LUBRICATOR
GO	GEAR OIL (XXX)
GPM	GALLONS PER MINUTE
HO	HYDRAULIC OIL
HP	HIGH PRESSURE
ID	IDENTIFICATION
NG	NATURAL GAS
NTS	NOT TO SCALE
OF/CI	OWNER FURNISHED / CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED / OWNER INSTALLED
OH	OVERHEAD
PAC	PUMP AIR CONTROLLER
S/O	SAND/OIL SEPARATOR
SPEC	SPECIFICATION
TLM	TANK LEVEL MONITOR
TYP	TYPICAL
UC	USED COOLANT
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UO	USED OIL
W	WATER
WWF	WINDSHIELD WASHER FLUID

EQUIPMENT GENERAL NOTES

- ALL CONTRACTOR FURNISHED (CF) EQUIPMENT SHOWN ON THESE DRAWINGS WITH A FOUR DIGIT IDENTIFICATION NUMBER IS BASED ON A SPECIFIED MANUFACTURER. ANY MODIFICATION AND/OR SUBSTITUTION OF SAID EQUIPMENT IS SUBJECT TO COMPLETE COORDINATION BY THE CONTRACTOR OF ALL CONNECTIONS SERVICES, OPENING SIZE AND ANY OTHER CONSTRUCTION RELATED REQUIREMENTS.
- ALL EQUIPMENT SHOWN ON THESE DRAWINGS WITH A FIVE DIGIT IDENTIFICATION NUMBER IS AN EXISTING PIECE OF EQUIPMENT. CONTRACTOR TO INSTALL EXISTING EQUIPMENT (LISTED AS OF/CI IN EQUIPMENT SCHEDULE). CONTRACTOR SHALL TEST OPERATION OF EXISTING EQUIPMENT WITH OWNER PRESENT PRIOR TO RELOCATION AND AFTER IT IS INSTALLED IN THE NEW FACILITY. EXISTING EQUIPMENT SHALL OPERATE IN THE SAME OR BETTER CONDITION AS PREVIOUSLY INSTALLED. COORDINATE SCHEDULE OF REMOVAL WITH OWNER.
- CONTRACTOR TO VERIFY AND COORDINATE ALL STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS OF EQUIPMENT WITH MANUFACTURER'S APPROVED SHOP DRAWINGS PRIOR TO INSTALLATION.
- THIS LAYOUT IS PROVIDED FOR GENERAL LOCATION OF EQUIPMENT. UNLESS SPECIFICALLY LOCATED BY DIMENSIONS ON THE DRAWINGS, THE EQUIPMENT SHALL BE PLACED NEAR THE LOCATION ON THE DRAWINGS BUT IN THE MOST OPERATIONALLY EFFICIENT POSITION AND ORIENTATION.
- SEISMICALLY BRACE ALL FIXED EQUIPMENT AND STORAGE EQUIPMENT PER LOCAL AND STATE SEISMIC RESTRAINT GUIDELINES.
- CONTRACTOR SHALL REFER TO EQUIPMENT LAYOUT DRAWINGS FOR EXACT LOCATIONS AND COORDINATION OF ALL EQUIPMENT. REFERENCE Q001 FOR EQUIPMENT IDENTIFIERS AND DESCRIPTION.
- COORDINATE WORK WITH ARCHITECTURAL FEATURES SO THE INTERFERENCE BETWEEN PIPING, EQUIPMENT, MECHANICAL WORK AND BUILDING STRUCTURE IS AVOIDED.

EQUIPMENT LINE TYPE LEGEND

CF/CI	_____
OF/CI	_____
OF/OI	- - - - -

SYMBOLS LEGEND

¢	CENTERLINE
④	KEYNOTES
⑧	FRONT/APPROACH ACCESS TO EQUIPMENT
●	ELEVATION
—	BREAK LINE
◎	WASH EQUIPMENT KEYNOTES

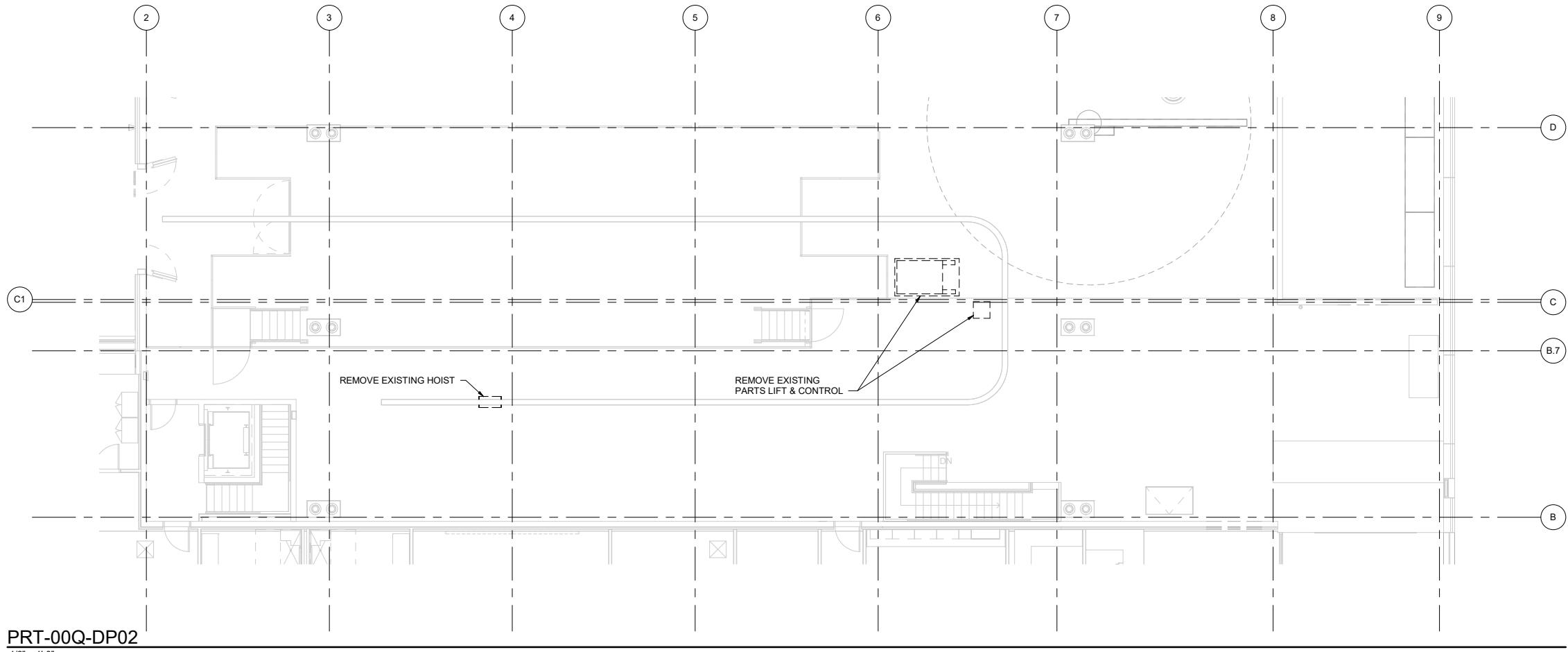
REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	TR
			DRAWN BY	JT
			CHECKED BY	TR
			APPROVED BY	TR
			DATE:	08/27/19



PRELIMINARY PLANS - 30%	DATE: 08-27-2019
FDR 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EQUIPMENT SCHEDULE AND NOTES

SCALE FOR 22" x 34":
1/4" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.:
Q001
SHEET NO.:
74



REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	TR
			DRAWN BY	JT
			CHECKED BY	TR
			APPROVED BY	TR
			DATE:	08/27/19



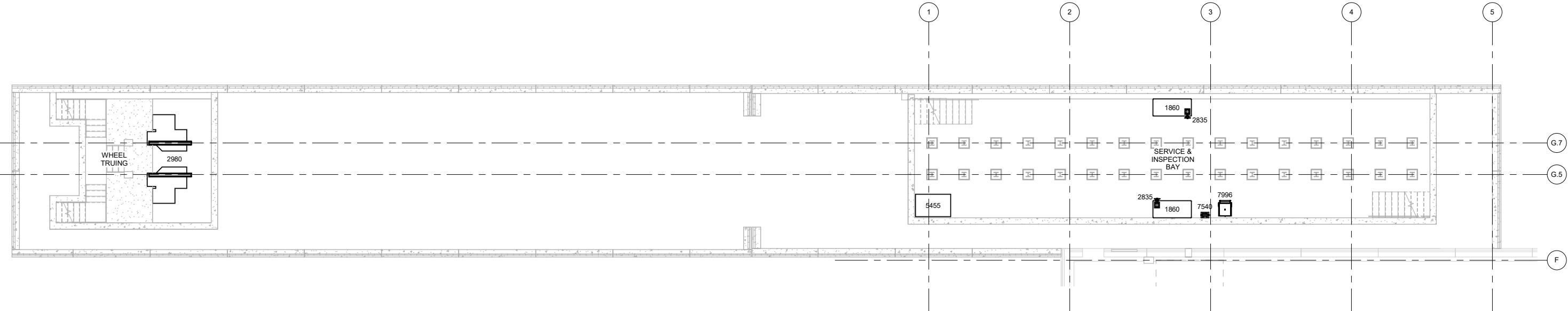
PRELIMINARY PLANS - 30%		DATE: 08-27-2019
 <p>10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856</p>		
NOT FOR CONSTRUCTION		

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EQUIPMENT DEMO PLAN
LEVEL 1

SCALE FOR 22"x34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: Q002
SHEET NO.: 75

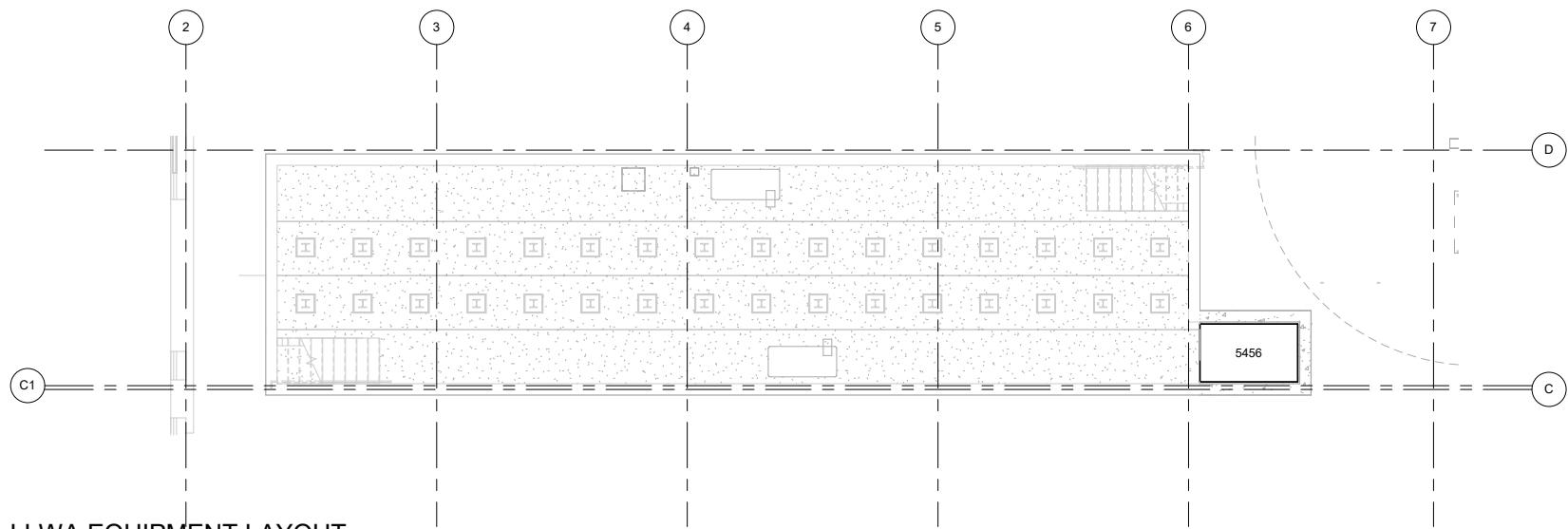
DRAWING SHEET NOTES

- 1 REFERENCE SHEET Q001 FOR ALL EQUIPMENT DESCRIPTIONS.
- 2 REFERENCE SHEET Q001 FOR ALL GENERAL EQUIPMENT NOTES
- 3 REFERENCE SHEET Q001 FOR ALL ABBREVIATIONS
- 4 REFERENCE SHEET Q001 FOR ALL EQUIPMENT KEYNOTES



LLWA EQUIPMENT LAYOUT

1/8" = 1'-0"



LLWA EQUIPMENT LAYOUT

1/8" = 1'-0"

N

0 4' 8' 16'

REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	TR
			DRAWN BY	JT
			CHECKED BY	TR
			APPROVED BY	TR
			DATE:	08/27/19



PRELIMINARY PLANS - 30%		DATE: 08-27-2019
FDR 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856		

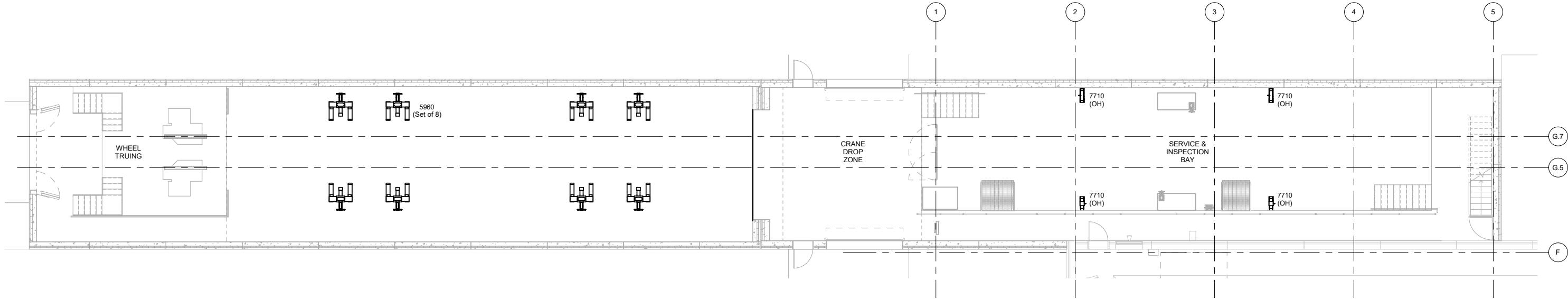
NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EQUIPMENT LAYOUT PLAN
LOWER LEVEL WORK AREA

SCALE FOR 22" x 34":
1/8" = 1'-0"
FILENAME:
CONTRACT NO.:
10147326
VOLUME:
DRAWING NO.: Q100
SHEET NO.: 76

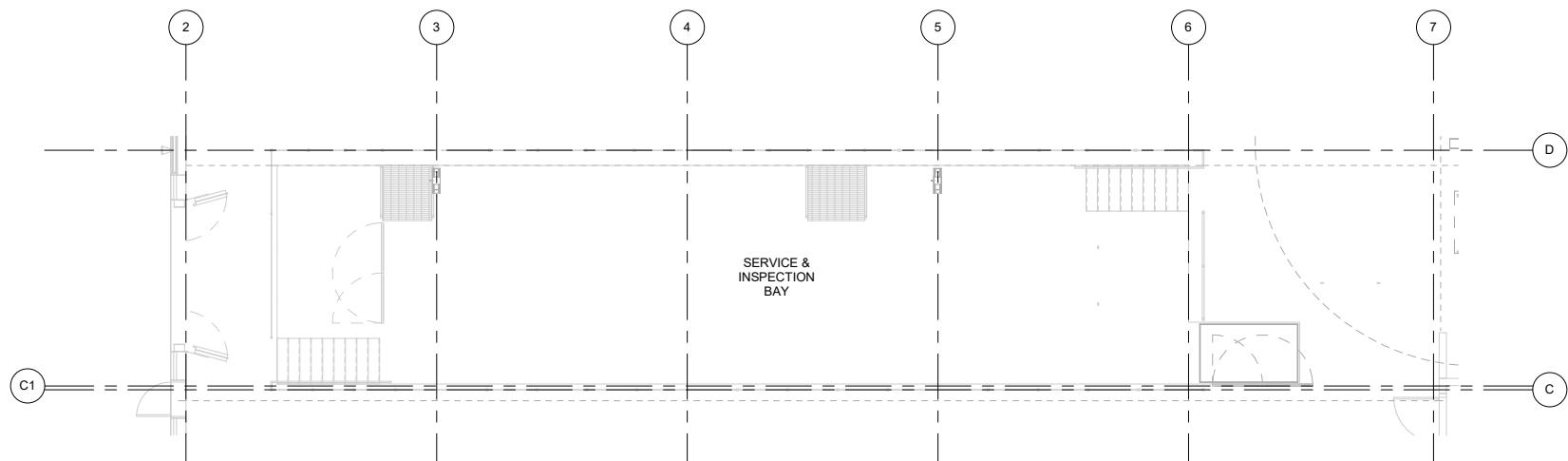
DRAWING SHEET NOTES

- 1 REFERENCE SHEET Q001 FOR ALL EQUIPMENT DESCRIPTIONS.
- 2 REFERENCE SHEET Q001 FOR ALL GENERAL EQUIPMENT NOTES
- 3 REFERENCE SHEET Q001 FOR ALL ABBREVIATIONS
- 4 REFERENCE SHEET Q001 FOR ALL EQUIPMENT KEYNOTES



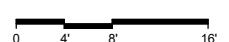
EXPANSION S&I BAY EQ LAYOUT

1/8" = 1'-0"



EXISTING S&I POSITION EQ LAYOUT

1/8" = 1' 0"



PRELIM
152

10450 Holmes Road
Suite 600
Kansas City, MO 64114

PRELIMINARY PLANS - 30%

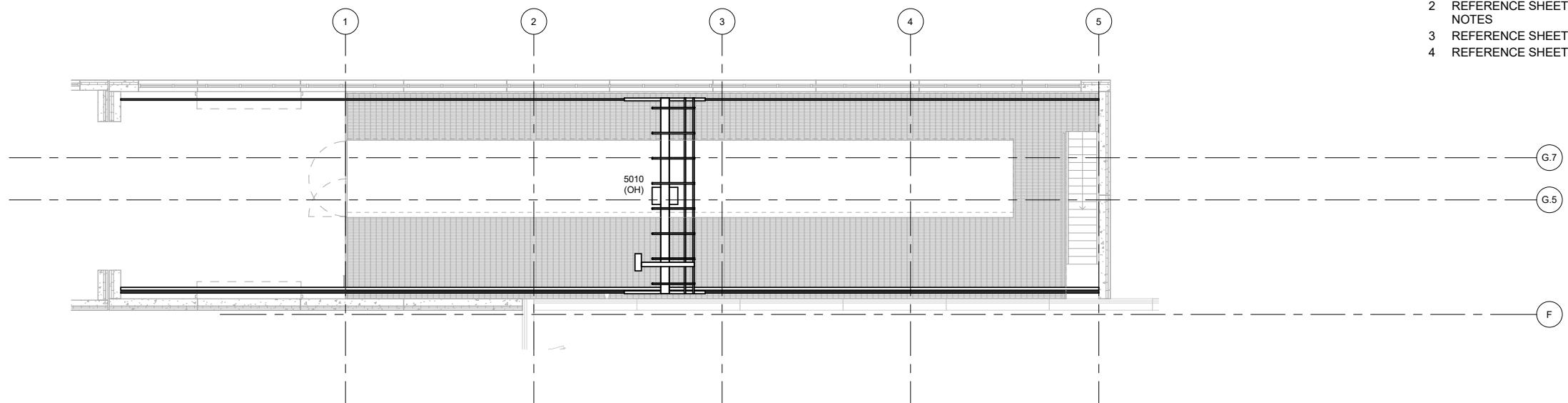
DATE: 08-27-2019

KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EQUIPMENT LAYOUT PLAN
LEVEL 1

ALE FOR 22"X34":	
= 1:0"	
ENAMEL:	
TRACT NO.:	
47326	
LUME:	
AWING NO.:	SHEET NO.:
Q101	77

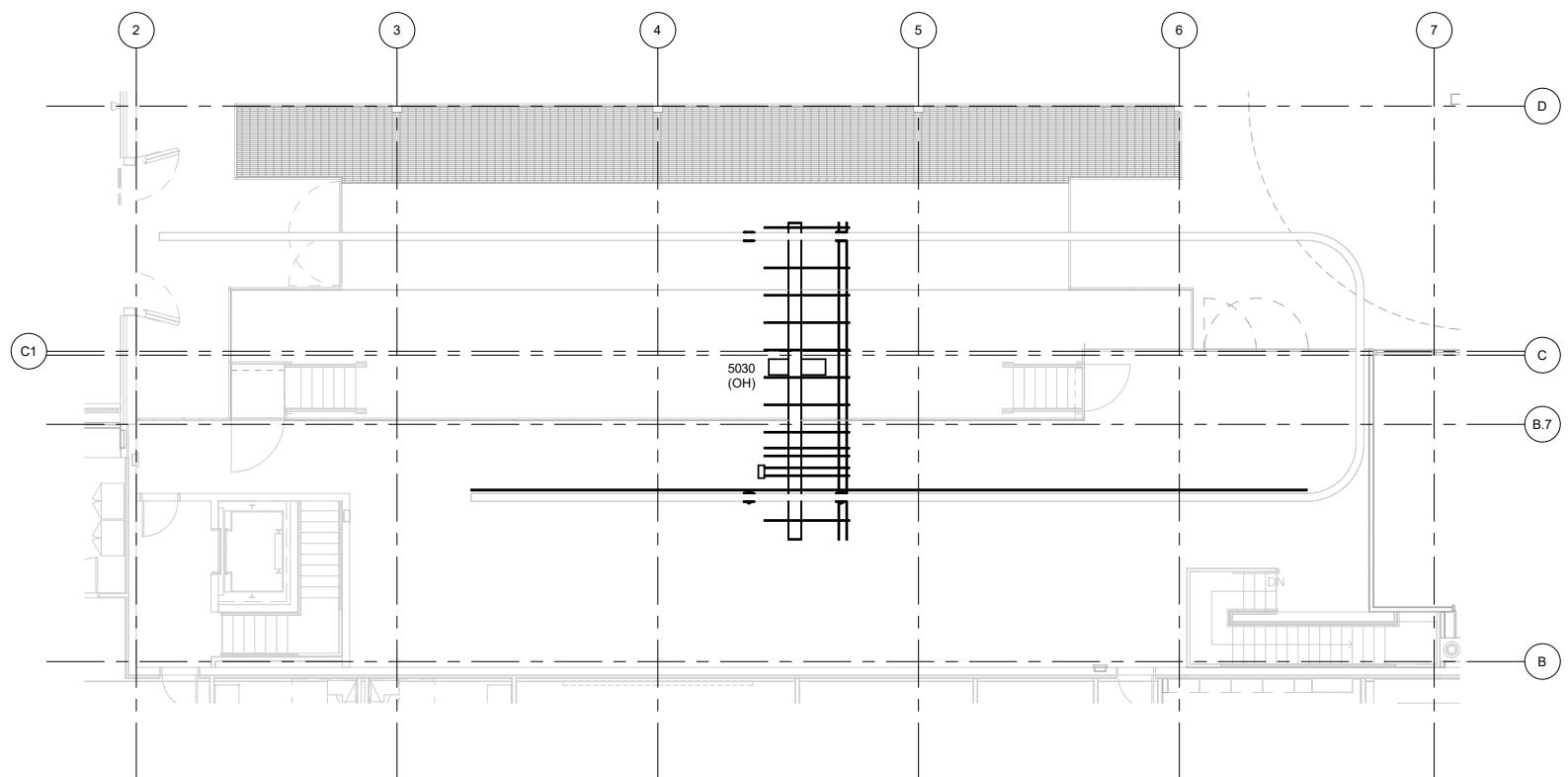
DRAWING SHEET NOTES

- 1 REFERENCE SHEET Q001 FOR ALL EQUIPMENT DESCRIPTIONS.
- 2 REFERENCE SHEET Q001 FOR ALL GENERAL EQUIPMENT NOTES
- 3 REFERENCE SHEET Q001 FOR ALL ABBREVIATIONS
- 4 REFERENCE SHEET Q001 FOR ALL EQUIPMENT KEYNOTES



PRT-00Q-FP02A

1/8" = 1'-0"



PRT-00Q-FP02B

1/8" = 1'-0"

0 4' 8' 16' N

REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	TR
			DRAWN BY	JT
			CHECKED BY	TR
			APPROVED BY	TR
			DATE:	08/27/19



PRELIMINARY PLANS - 30%	DATE: 08-27-2019
 10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	

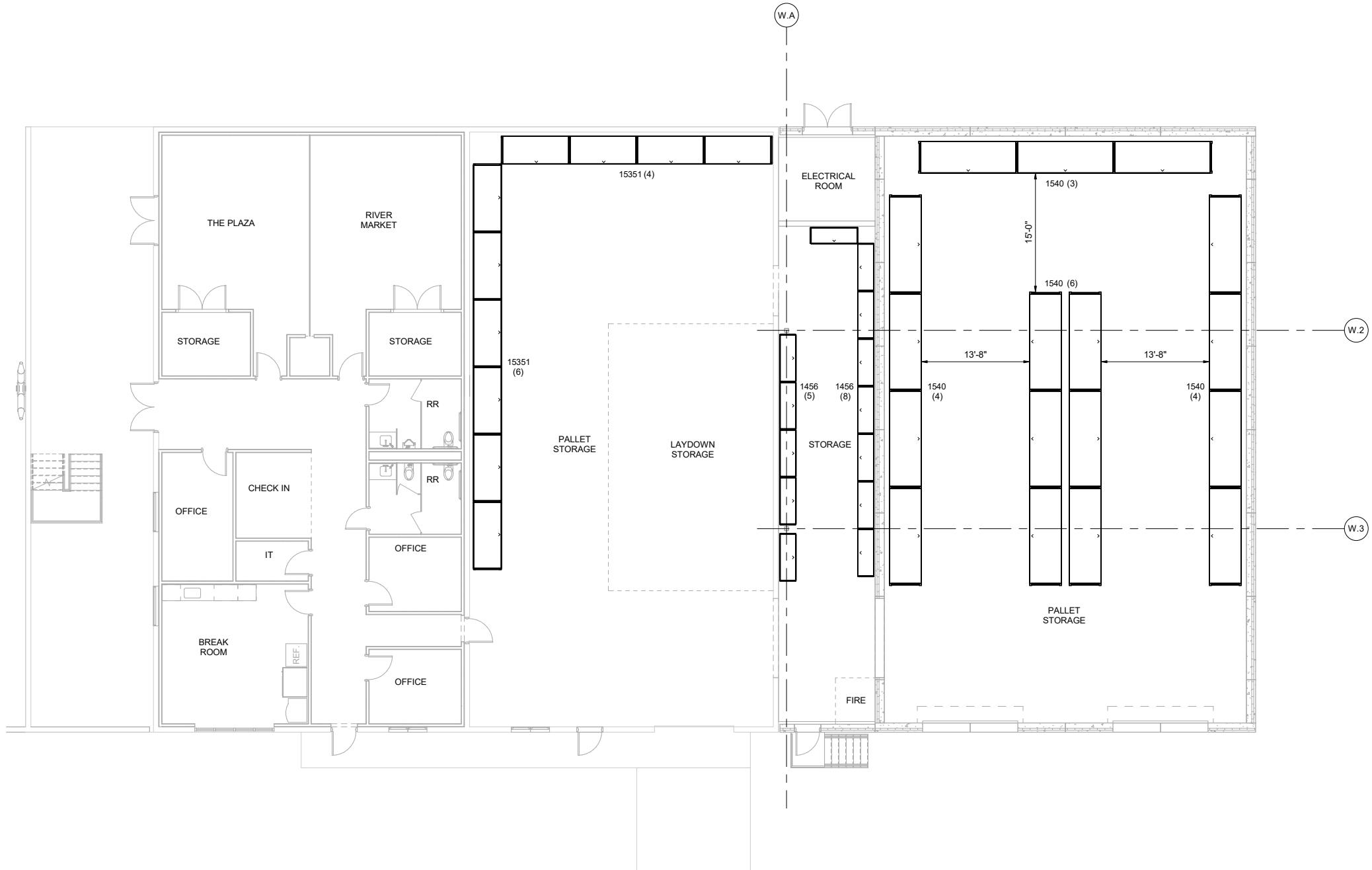
NOT FOR CONSTRUCTION

KANSAS CITY STREETCAR MAIN STREET EXTENSION
 VEHICLE MAINTENANCE FACILITY
 EQUIPMENT LAYOUT PLAN
 LEVEL 2

SCALE FOR 22"x34":
 1/8" = 1'-0"
 FILENAME:
 CONTRACT NO.:
 10147326
 VOLUME:
 DRAWING NO.:
 Q102
 SHEET NO.:
 78

DRAWING SHEET NOTES

- 1 REFERENCE SHEET Q001 FOR ALL EQUIPMENT DESCRIPTIONS.
- 2 REFERENCE SHEET Q001 FOR ALL GENERAL EQUIPMENT NOTES
- 3 REFERENCE SHEET Q001 FOR ALL ABBREVIATIONS
- 4 REFERENCE SHEET Q001 FOR ALL EQUIPMENT KEYNOTES



WAREHOUSE EQUIPMENT LAYOUT

1/8" = 1'-0"

0 4' 8' 16' 

REV	DATE	DESCRIPTION	DESIGNED BY	JT
			CHECKED BY	TR
			DRAWN BY	JT
			CHECKED BY	TR
			APPROVED BY	TR
			DATE:	08/27/19



PRELIMINARY PLANS - 30%		DATE: 08-27-2019
	10450 Holmes Road Suite 600 Kansas City, MO 64131-3471 816-360-2700 Certificate of Authority: 000856	

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KANSAS CITY STREETCAR MAIN STREET EXTENSION
VEHICLE MAINTENANCE FACILITY
EQUIPMENT LAYOUT PLAN
WAREHOUSE

SCALE FOR 22"x34": 1/8" = 1'-0"	FILENAME:
CONTRACT NO.:	10147326
VOLUME:	
DRAWING NO.:	Q110
SHEET NO.:	79